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ABSTRACT

This handbook is intended to serve as a practical guide for community college and district personnel to use in surveying the needs and preferences of individuals for occupational education. The contents were developed during a three-phase curriculum development project. The most important project phase for developing the handbook consisted of a series of district and college pilot tests of various approaches to needs assessment. As utilized here, the term needs assessment means a survey which measures the perceptions, opinions, preferences, and perceived needs of a population with respect to some aspect of education and educational institutions. Included in the contents are: approaches to conducting a needs assessment; steps in conducting an in-house assessment; contracting with an outside organization; and, selected references. (Author/GK)

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ED209323

NEEDS ASSESSMENT HANDBOOK

California Community Colleges

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Vocational Education Needs Assessment Project

1980

CHANCELLOR'S
OFFICE

CALIFORNIA
COMMUNITY
COLLEGES

NEEDS ASSESSMENT HANDBOOK

VOCATIONAL EDUCATION NEEDS ASSESSMENT PROJECT

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PREFACE

A variety of techniques are used in the planning of occupational education programs in community colleges. In developing specific occupational curricula, there is a need to assess both the preferences of individuals who may become students and the need for trained persons in the job market. Objective data for the latter are becoming available through the employment demand component of the California Occupational Information System. Information on individual preferences, however, has generally not been available.

Vocational education curricula can be accessible and efficiently delivered, but if they are not preferred by individuals or needed for employment, they waste limited community college resources. Individual preferences are known to differ among communities throughout California. The Board of Governors' Plans, the 1976 Vocational Education Act, and California Vocational Education Plans all stress the need for districts to assess the particular preferences of their communities when evaluating existing curricula and prior to initiating new programs.

This Handbook is intended to serve as a practical guide for community college and district personnel to use in surveying the needs and preferences of individuals for occupational education. A Technical Supplement to the Handbook, which contains sample planning documents, questionnaires, forms, computer programs and training materials, is available upon request.

Handbook contents were developed during a three-phase curriculum development project funded under Subpart 3 of the Vocational Education Act (P.L. 94-482). Awarded to the Los Rios Community College District, the Project was administered by the Chancellor's Office and overseen by an advisory committee composed of 12 state and local district representatives.

The most important Project phase for developing the Handbook consisted of a series of district and college pilot tests of various approaches to needs assessment. All approaches were modeled in general after a statewide survey conducted by Field Research Corporation in an earlier phase of the Project. However, each individual approach was developed to fit particular local needs and conditions.

Jennifer Franz was Project consultant and is the author of this Handbook. While many individuals contributed to the Project (see the list of acknowledgments in the Appendix), it was Ms. Franz' competence and untiring efforts that made this Project a success.

Those of us who worked on the Vocational Education Needs Assessment Project hope that community colleges will use this Handbook as a guide, modify its suggestions to suit local circumstances, and communicate their own experiences to others. Moreover, we hope that the experiences and approaches described herein will be of value - as they were to Project participants - in developing useful data for occupational program planning and curriculum development.

Chuck McIntyre, Director
Analytical Studies Unit
Chancellor's Office
June 1980

I. INTRODUCTION

Have you ever wondered . . .

- What proportion of area residents are aware of your institution and what it has to offer?
- What priority the community places on your various programs and services?
- How the general public evaluates your several functions?
- In what areas residents believe they need additional occupational training or instruction, and the extent to which they might attend your institution in order to obtain it?
- What types of supportive services various "special needs" populations in the community would require in order to attend?
- What the level of interest might be in a new program or service - such as an offering in a new or emerging occupation, or a program for re-entering women?
- Who the people are who *DON'T* attend - and why they don't?

If these and similar questions have bothered, perplexed or perhaps merely interested you and your institution, this Handbook is designed for you. It is also designed for:

- Institutions undergoing accreditation
- Institutions contemplating new or revised offerings
- Institutions following the occupational program planning criteria specified in the California State Plan for Vocational Education
- Institutions attempting to meet the needs of previously underserved or disadvantaged populations

In short, this Handbook is intended for any college or district which is serious about planning and which wants to bring comprehensive and accurate information to bear on its programmatic and curricular decision-making. Moreover, although the focus of this volume is on vocational education, its utility extends to all aspects of the community college program. This is because:

- It is impossible to assess the community's preferences and needs for occupational education in a vacuum. As a result, a considerable amount of the information which emerges from even a vocational-education-focused assessment is applicable to overall community college planning and evaluation.

- District resources can be more appropriately allocated to vocational education if community needs and preferences for occupational programs and services are contrasted with needs and preferences for other programs and services offered by the district.
- The approaches and techniques described in this Handbook can be used in any program or content area.

Those who participated in the project on which this Handbook is based represented all segments of community colleges: general administration, community services, instruction, public information, research, resource development and vocational education. Administrators, facuity, staff, students and even members of the community took part. Collectively, we have experimented with a process and developed a procedural guide which should serve better to inform and to benefit the entire institution. That process is needs assessment.

WHAT IS NEEDS ASSESSMENT?

The term needs assessment may well rank as one of the most familiar and least clearly understood elements of educators' vocabularies. Linguistically, the term is relatively simple: a "need" (per Webster) is "something useful, required or desired that is lacking"; "assessment" (again per Webster) is "a way . . . of setting an amount on (something)." Thus needs assessment is, in effect, a means of quantifying something which is lacking.

In education, the term needs assessment has been interpreted in a manner far different from that which one might expect given its component words. Typically, needs assessments in education consist of one or more surveys in which the responding populations are asked for a wide variety of perceptions and opinions about education and educational institutions which may or may not include needs. In effect, then, most needs assessments are in fact "preferences, perceptions and wants assessments," and it is probable that they should be so labelled in order to avoid confusion and misinterpretation.

Viewing the term needs assessment in this manner has two primary advantages:

- It permits those conducting the assessment to inquire about a variety of issues in the context of a single study
- It avoids lengthy and frequently fruitless debates about the objective criteria for determining need

The disadvantage of this interpretation is that assessments are frequently intepreted as objectively determining needs, which can lead to some conspicuous errors in policy development and program planning. If needs assessments do in fact address needs, they almost universally address *PERCEIVED* needs. Inasmuch as perceived needs may not only be quite different from "real" or objective needs but also quite differently pursued, this distinction is critical in analyzing and utilizing assessment results.

The perspective of this Handbook is that the familiar interpretation of the term needs assessment represents both a valuable and potentially highly beneficial approach to program planning, assuming that some inquiry regarding needs is in fact included. It is important to recognize, however, that it will not generate *OBJECTIVE* data on needs. Rather, it will illuminate preferences and perceived needs - which, if one believes that the individual is his or her best spokesperson and advocate, may actually represent the optimal information for aligning an institution with the community's priorities.

As utilized in this Handbook, then, the term needs assessment means a survey which measures the perceptions, opinions, preferences and perceived needs of a population with respect to some aspect or aspects of education. The key question then becomes: which population?

It is not uncommon for educational institutions to conduct needs assessments which rely heavily or even exclusively on the perceptions of those already within the system - e.g., students, faculty or staff - or those who are in some way influential with respect to the system - e.g., Chamber of Commerce members, elected officials or other service providers. While this approach may generate valuable information, it is the philosophy of this Handbook that such studies are both inadequate and inappropriate as needs assessments. There are two interrelated reasons for this assertion. In the first place, the study population is insufficient for planning purposes. Secondly, the approach is too substantial a departure from the identification of needs (defined as lacks) to merit being termed a *needs* assessment.

The more the population being surveyed during the course of a needs assessment represents those who have some involvement with the institution, the more the results will tend to reflect the way things are rather than the way things might or ought to be. If the objective of the study is to validate or confirm support for current practice (which in many instances can be a valid objective), then this is a useful approach. For planning purposes, however, it is considerably less valuable. Moreover, it tends to leave one wondering what "the rest of the folks out there" perceive or might prefer.

Related to this is the fact that those who are involved with an institution will tend to be those whose wants or needs are being met by that institution. The converse of this is that those who have wants or needs which the institution cannot or is not attempting to meet will tend not to be involved. To the extent that the institution conducting the assessment wishes to address unmet needs, then, a survey of participants and/or those with some influence on the institution will prove to be of marginal value.

Given these considerations, the project under the auspices of which this Handbook was developed determined that the target population for a needs assessment should be the community as a whole.[1] For the purposes of this Handbook, then, a needs assessment can be defined as:

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[1] Lest the reader be appalled at the enormity of this notion, it should be noted that the entire community need not be surveyed for this statement to be valid. More about that in Chapter III (Phase 1 - Step 6).

A survey which measures the perceptions, opinions, preferences and perceived needs of the community as a whole with respect to some aspect or aspects of education and educational institutions.[2]

WHY NEEDS ASSESSMENT?

If the definition presented in the preceding section is so broad as to admit to an almost infinite variety of applications, it is that way by design. There are a virtually endless number of questions which needs assessments can answer and an equally endless number of dilemmas which they can help to resolve. Consider, for example, the following situations:

- Your institution is up for accreditation next year. Your stated objectives give equal weight to seven major program areas, yet over one-half of your offerings are occupational. How do you demonstrate that the community supports you in this ostensibly unbalanced allocation of resources?

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[2]For the most part, the educational institutions of concern to the reader will be community colleges. However, the methodology described herein is equally applicable to other types of institutions and was in fact used for that purpose by one Project participant. College of the Redwoods coordinated a needs assessment among all educational institutions which serve adults in Del Norte, Humboldt and Coastal Mendocino Counties. Their approach is described in the Technical Supplement.

- You would like to offer two new programs in emerging occupational areas next year. Projected labor market demand supports your decision. However, you believe that the occupations are somewhat obscure, and you suspect that they may be unfamiliar to many potential students. How do you determine possible interest in these programs and the extent to which you will need to overcome public unfamiliarity with their content?

- Evening enrollment has been declining, and you wonder what the reason is. You suspect (and have heard talk to the effect) that the fear of poorly lit parking lots is a major factor, and you would like to ask the Board for more lighting. How do you document your request?

- Because of the increasing emphasis on sex equity, you would like to implement a program of counseling and short courses for people seeking nontraditional occupations. You are fairly certain that a substantial number of students and community members would be interested in such a program because you have perceived an increase in inquiries about nontraditional employment. Others contend that the program would be of limited interest. How do you determine what proportion of residents in your service area are seeking nontraditional careers?

- Members of the Board have been urging you to do something to enroll more disadvantaged and minority students. You have had an active student affirmative action program for several years, and you contend that your enrollment of disadvantaged students actually exceeds their proportion in your community. How do you validate this claim?

- Your institution offers classes at several sites in the community as well as on the main college campus. With resources becoming increasingly scarce, a proposal has been made to eliminate selected off-campus sites. How do you determine what effect this action might have on the willingness and ability of certain segments of the population to attend?

- The budget for your community services program has been cut, and you need to set priorities among the activities you offer. You have current attendance figures, but you wonder if they are truly reflective of the activities of greatest interest to the community. (You also wonder what proportion of the general public even knows what you have to offer.) How do you determine what your priorities ought to be?

There is a variety of information which might be brought to bear on these questions. In many instances, indicators could be obtained from in-house sources; in others, demographic data could be utilized. In some cases, however, such information simply is not available, and in every instance it would illuminate only a portion of the total picture. Decisions would reflect the needs and desires of selected segments of the population rather than being representative of the community as a whole.

Needs assessment provides planners with generally not otherwise available information about the needs of the entire community. In many situations, moreover, it gives planners the *ONLY* information that is available or relevant to the question. This, then, is the primary answer to the question "Why Needs Assessment?"

Both the Board of Governors' Five-Year Plan and the California Five-Year Plan for Vocational Education recognize the potential benefits of needs assessments and encourage districts to utilize them in planning. These documents emphasize a second rationale for needs assessment which is critical in a society in which participation in postsecondary education is essentially a function of supply and demand: programs need to be based on a realistic balance between the needs and preferences of individuals and the needs and demands of society.

In the 1976-1981 Five-Year Plan for the California Community Colleges, the Board of Governors included the following statement in its planning philosophy:

> *The needs of society and preferences of individuals for education are both important in a society devoted to a freedom of choice educational philosophy. Under this philosophy there is an attempt to supply the appropriate amount and kind of education predicated upon existing and anticipated student demand . . .*

This philosophy was articulated in the 1977-82 Plan via the following suggested criteria for program development:

> *Plans for program development should be oriented more to the future and based upon at least four criteria: (a) expected community interest and student demand, (b) employment opportunities, (c) societal conditions, and (d) plans of other organizations and districts providing similar programs.*

The Plan went on to caution districts not to rely too heavily on any one of these criteria, but rather to temper any decisions with considerations of the needs of society. In this regard, the Plan concluded, districts should assess the educational needs of the community ". . . in order to ensure properly balanced program development."

Perhaps the best illustration of this approach can be found in the area of occupational education - an area in which many "hard data" can be brought to bear on the decision to initiate or terminate a program. If labor market information shows a high current and future demand for workers in a given area, then it would appear logical to initiate a program in that area if one does not already exist. If most community residents do not perceive themselves as needing occupational training or instruction, however, or if interest in the particular occupational area is minimal, then considerable time, effort and resources would be expended on meeting the needs and desires of relatively few individuals. Optimal decision-making in this regard would take both individual (subjective) and societal (objective) information into consideration. And the relevant individual or subjective information can only really be obtained via needs assessment.

In sum, needs assessment provides planners, decision-makers and curriculum developers with information which is:

- Community-wide, illuminating the needs, preferences and concerns of all residents
- Generally not otherwise available
- Necessary in order to balance the need and preferences of individuals with the needs and demands of society

Needs assessment, then, is a key initial aspect of the planning process and a major component of a balanced community college plan. The remainder of this Handbook will discuss how you and your institution can actually conduct one, beginning with the various approaches you might take and then proceeding step-by-step through the actual implementation of these approaches.

II. APPROACHES TO CONDUCTING A NEEDS ASSESSMENT

INTRODUCTION

Having paid close attention during Chapter I and recognized that a needs assessment is vital to your institution, you have of course decided by this point that you are going to conduct one ... *WHO* **Is** ??? ... You *ARE* ???

If you are like most people, your enthusiasm for and appreciation of the value of such an endeavor was quite rapidly overshadowed by a number of practical and discouraging considerations. Such as the existing demands on your time. The demands on other people's time. Money. And perhaps the fact that you're a ways from understanding precisely how to go about it.

The objective of this chapter is to reassure you that your objectives can in all probability be achieved given existing resources. And also, through the experiences of others, to suggest that planning and implementing a needs assessment can be an exciting, challenging and highly rewarding undertaking.

Fundamentally, there are three approaches to conducting a needs assessment: doing it yourself; hiring someone else to do it; or doing part of it yourself and hiring someone else to do the rest. Within each of these approaches, there are an almost infinite number of variations, each of which has both advantages and disadvantages. These advantages and disadvantages revolve around two basic considerations: resources (both human and financial); and what might be termed "technical perfection."

In general, the more of the work on a needs assessment you are willing or able to do yourself (i.e., in-house), the less it will cost you in terms of financial resources. Human resources, on the other hand, will be consumed in far greater measure than if you were to contract with an outside individual or firm.

Also in general, unless you are an experienced survey researcher (which designation does not apply if you conducted a single survey for your graduate degree or if you design questionnaires for in-house administration), it is probable that the "technical perfection" of your assessment will increase in proportion to the amount of work you contract out (or at least obtain professional advice on). Each decision you make thus involves trade-offs among time, money, and "technical perfection."

Statisticians and researchers are notorious for insisting on a kind of perfection in the design and implementation of surveys which frequently baffles planners and decision-makers. In large part, this is probably due to the fact that the terminology and concepts used in research are both obscure and detail-oriented, while administrators tend to think in tangible and global terms. Although it is not important to understand the details at this point, however, it is essential that those who are contemplating a needs assessment understand the fundamental objectives which "technical perfection" is designed to achieve. There are two: *VALIDITY* and *RELIABILITY*.

The term *VALIDITY* means that you are in fact assessing what you intend to assess. That is (to use a somewhat ridiculous example), if you ask someone for his or her age, you will be given that individual's age and not someone else's. This concept is particularly crucial in the design of assessment questions, when the addition or deletion of a single word or phrase can change the entire meaning of a query.

RELIABILITY means the extent to which the assessment results would be the same were one to ask the same questions again.[1] For example: if an assessment conducted in June showed half of those surveyed to be under 30 years of age, would we find the same thing in July (other

[1] Clearly, perceptions and preferences change over time, and it is therefore entirely possible to obtain two different sets of results which are equally reliable. On items which are not subject to change, however, a reliable assessment will obtain consistent results every time it is implemented.

things being equal and providing there were no sudden influx of the elderly)? This objective is acheived for the most part by the selection of the population to be surveyed and by the way in which the survey is actually implemented.

The achievement of both of these objectives requires not only a base of knowledge, but also a keen attention to detail. Moreover, and unfortunately, the failure to do so can have a marked effect on the utility of the survey results - an effect of which an inexperienced person may be utterly unaware. A lot of wasted or inappropriate planning can be done on the basis of invalid or unreliable survey data.

Some examples may serve to illustrate the trouble one can get into if one does not attend to the details of a needs assessment. Although it should be fairly obvious what can go wrong with respect to validity, consider the following examples:

- You want to find out what percentage of the population you survey is enrolled in your institution. Because you are isolated, you make the (mistaken) assumption that yours is the only institution you need to be concerned with and ask simply, "Are you enrolled in a community college?" You come up with a 13.1 "yes" response - almost 5 percentage points higher than the statewide average! You gleefully broadcast this finding - only to be suitably embarrassed when someone points out

your erroneous assumption. A single word ("XYZ" Community College rather than "a" community college) would have made a substantial difference in your results.

- You want to find out what percentage of those who say they are planning to attend your institution believe they will need various supportive services (e.g., financial aid, counseling) when they do. Unfortunately, an undetected sequencing error leads you to ask the question of those who are <u>not</u> planning to attend. When you discover your error (after all the results are in), you have no alternative but to throw the entire question out.

The problems which can arise from an unreliable survey are less readily apparent. Moreover, they are frequently less readily detected when the results are in. The following examples are illustrative:

- You decide to conduct your assessment via personal interviews. Although you pay careful attention to the recruiting and training of interviewers, you fail to notice that one of your interviewers has a penchant for re-phrasing the questions for bilingual people so they will "understand what we really mean." As a result, your responses show a marked need for bilingual services - because that is what the interviewer thought you wanted (or personally wanted). Unless you used the same interviewer, it would be impossible to get the same results. (And if you were to plan on the basis of your results, you might well plan something for which there was little or no demand.)

- In selecting the population to be surveyed, you inadvertently overlook a new outlying area not yet on the map, which is predominantly inhabited by the community's young professional families. When your results come in, you notice an improbable preponderance of older and lower-income respondents. Again: if you were to plan on the basis of these responses, your plans would fail to reflect the needs of an important segment of the population.

The above examples (most of which are true) are merely illustrative; the design and implementation of surveys is exceedingly error-prone, and the number of things which can go wrong is virtually infinite. What these examples are designed to demonstrate is that the "technical perfection" demanded by statisticians and researchers is vital to the accuracy and reliability of survey results. All of which is *NOT* to say that you cannot do it yourself. Quite the contrary: some highly credible needs assessments have been conducted by community college districts using little more than their own resources. Which *IS* however to say: the decision to conduct an in-house survey requires a certain body of knowledge (most of which you can get from this Handbook) plus a commitment to care, caution and the relentless pursuit of detail.

The sections which follow describe in detail the relative advantages, disadvantages and costs of the three approaches to needs assessment: conducting it in-house; contracting with an external organization; and combining internal and external resources.

THE IN-HOUSE NEEDS ASSESSMENT

Basically, the advantages of a do-it-yourself or in-house needs assessment are:

- its relatively low cost in terms of financial resources
- The ease with which it can be made to respond to changing local needs

The disadvantages of this approach are:

- its relatively high cost in terms of human resources (i.e., staff time)
- The need for a certain level of in-house expertise in order to ensure the validity and reliability of the results

A more subjective advantage of an in-house assessment is that it can be a unifying and challenging activity which generates an enormous amount of enthusiasm and "esprit de corps" among those involved. Moreover, it has the potential to serve as a valuable learning activity for students. Consider the experience of the Ventura County Community College District:

> Would we do it again? Definitely. We really learned a lot about how to do it - what to do and what not to do. And even though we don't have the results yet, we are confident they will be good.[2]

Or, as Yosemite Community College District personnel expressed it:

> We all had different agendas. We wanted to learn more about our capability to do it, but also about the specifics. So there was a high level of involvement, both campus by campus and at the district ... Responses as a whole were overwhelmingly friendly. We don't have all the data yet, but there are indications they will be very useful in decision-making.

Finally, in a somewhat lighter vein, a representative of Allan Hancock College concluded a list of needs assessment "Do's and Don't's" with the following:

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[2]This and the following comment are excerpted from remarks made by pilot test participants during a series of regional workshops on community needs assessment techniques sponsored by the Project in June of 1980.

> DON'T be reluctant about the Project. It will turn out to be exciting and fascinating - except for some of the students who will dream that their ears have turned into telephone receivers.[3]

Costs for in-house assessments will vary greatly, with the result that it is virtually impossible to attach a precise dollar figure to this type of undertaking. Partly, this is because local circumstances are so varied, and partly because it is exceedingly difficult to quantify (in terms of dollars) the expenditure of human resources. In addition, costs will depend upon:

- The scope of the effort (e.g., the number of questions to be asked and the number of responses desired)
- The precise method employed
- The extent to which expenses such as printing and telephone charges can be absorbed into existing budgets

Project participants' needs assessment budgets ranged from approximately $4,000 to around $10,000, including staff time. Some components of these costs at both ends of this range are depicted in the sample

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[3] Letter to the author, 27 May 1980.

budget in Figures II-1 and II-2 on pages 24 thru 27.[4]

The extent to which human resources (i.e., staff time) will be needed in order to conduct an in-house needs assessment will also vary considerably depending upon local conditions. Some issues which will have a marked effect on the time involved are:

- Will decision-making be centralized, or will several people or perhaps a committee be involved?
- Will Board approval be required? How frequently?
- Will existing models be adapted for local circumstances, or will entirely new approaches be developed?
- If existing models are adapted, how extensive will the changes be?
- How extensive will the total assessment be, and what number of responses will be solicited?

---

[4] The figures in these sample budgets are offered as *indicators* of the kinds of costs involved in mounting an in-house needs assessment and should not be treated as absolutes. What you actually wind up expending may be considerably more (or perhaps even less), depending on local circumstances and the nature of your assessment. Moreover, inflation will undoubtedly date any actual dollar amounts in the relatively near future.

FIGURE II-1

ALLAN HANCOCK COLLEGE

NEEDS ASSESSMENT BUDGET*

METHOD: Telephone Interviews
SCOPE: 10-Minute Interview
391 Completed Interviews

I. DIRECT COST		
A. PERSONNEL		
1. Instructor 49 hours x $18 per hour		$ 882
2 hours testing questions		
2 hours testing instruments		
8 hours workshop		
35 hours supervising interviewing		
2. Students 140 hours x $3.10 per hour		434
3. Key punch 10 hours x $7 per hour **		70
SUBTOTAL		$ 1,386

* All figures other than the estimated indirect costs are from the budget proposed for the Project in April 1980. The district subsequently indicated that actual expenditures were within $100 of the amount budgeted.

** Data were processed by the Chancellor's Office.

B.	LONG DISTANCE CALLS	
	1. Santa Ynez Valley	
	18¢ first minute, 11¢ each additional minute	
	75 instruments completed at 15 minutes each	$ 129
	450 uncompleted calls at 18¢ each	81
	2. Project inquiries to consultant in Sacramento	100
	SUBTOTAL	$ 310
C.	CONSULTANT	
	1. One-day visit to Hancock (expenses only)	$ 300
D.	CONTINGENCIES	300
	TOTAL DIRECT COST	$ 2,296
II.	INDIRECT COST	
A.	STAFF TIME - ESTIMATE	$ 2,000
	(Re-allocated Time - Administrator and Clerical Staff)	
	TOTAL INDIRECT COST	$ 2,000
	GRAND TOTAL	$ 4,296

FIGURE II-2

VENTURA COUNTY COMMUNITY COLLEGE DISTRICT
BUDGET FOR VOCATIONAL EDUCATION NEEDS ASSESSMENT*

METHOD: Telephone Interviews
SCOPE: 12-Minute Interview
1,300 Completed Interviews

I.	DIRECT COST		
	A. INTERVIEWERS	$ 2,424	
	(600 person-hours @ $4.04)		
	B. ADVERTISING FOR INTERVIEWERS	100	
	C. TRAINING OF INTERVIEWS	230	(actual)
	(Consultant-expenses only)		
	D. TELEPHONE TOLL & LONG DISTANCE CHARGES	595	(actual)
	E. MILEAGE	50	
	F. REPRODUCTION OF FORMS AND MATERIALS	800	
	G. DATA PROCESSING TIME AND FORMS	600	(actual)
	(Key data entry only - outside contract**)		
	SUBTOTAL	$ 4,799	

* Unless otherwise noted, figures are from budget proposed by the public information office. The district subsequently reported that actual expenditures were within the proposed budget for all line items.

** Data were processed by the Chancellor's Office.

II.	INDIRECT COST	
	Staff Time - Estimated Value	$ 5,000
	(Compensatory or release time)	
	GRAND TOTAL	$ 9,799

Assuming that a relatively small number of people are involved and that the survey is moderate in scope, it is safe to say that an in-house needs assessment can be accomplished in an elapsed time of approximately three months (or even less if one is extremely organized and efficient), during which time one individual devotes an average of an hour or two per day to the effort and several other individuals contribute on a periodic basis.[5] If responses are to be gathered using telephone or personal interviews (see Chapter III), approximately six person-hours per day (largely in the evenings and on weekends) need to be set aside during the interviewing phase, which can be expected to last an average of two to three weeks. Thus roughly 100 person-hours will need to be devoted to the assessment during this time period.

THE EXTERNAL NEEDS ASSESSMENT

There are a variety of individuals and organizations which, for a fee, will be pleased to do all of the work on your assessment for you. The Advantages of this approach are:

[5] The elapsed time from planning through receipt of the results among Project participants ranged from six weeks to six months. However, most participants devoted between three and four months to the effort.

- Its relative low demand on human resources
- Its relative assurance of professional quality work with the attendant benefits of validity and reliability
- The objectivity which an outside organization can bring to bear

The disadvantages of this approach are:

- Its relatively high cost in terms of financial resources
- The difficulties inherent in communicating thoughts, ideas, concerns and last-minute changes to someone at a distance

The costs for an external needs assessment will vary even more substantially than the costs for in-house assessments. In addition to the variables which affect the expenditures for a do-it-yourself study, there are the following to consider:

- The type of external contractor involved (i.e., individual or firm; large or small organization)
- The amount of work you are willing or able to do yourself (particularly with respect to instrument design)
- Your geographical location

These and other factors affecting the cost of an external contract will be discussed in more detail in Chapter IV. In general, however, it is safe to say that a needs assessment conducted by a reputable professional organization will invariably cost more in terms of "hard dollars" than one conducted in-house - and typically more than any combination of dollars and re-allocated staff time. Just how much more, however, depends on too many "if's" to be pinned down to a specific dollar amount.[6]

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[6]For purposes of comparison, you may wish to consider the following figures from the Project. The Ventura County Community College District planned and conducted 1,300 12-minute interviews at an approximate total cost of $7.68 per interview. On a smaller scale, Allan Hancock College planned and conducted 391 interviews at an approximate cost of $10.99 per interview. (The differences between the two districts' per-interview costs derive in large part from economies of scale.) In contrast, a reputable professional firm was charging around $13.00 during the same time period for approximately 400 8-minute interviews, excluding most design work. Again, however, a caution: these figures are far from absolute. Smaller or less sophisticated firms might charge less, and a different strategy might be less costly. Finally, inflation can be expected rapidly to date this information.

COMBINING INTERNAL AND EXTERNAL EFFORTS

There are a variety of ways in which the tasks involved in a needs assessment can be allocated to combinations of internal and external resources. For example, you might:

- Design the assessment and then have a professional organization conduct it
- Design the assessment, have a professional review and modify it, and then conduct it yourself
- Have a professional design the assessment and then conduct it yourself

Approaches such as these will relieve you of some of the burden on human resources - and set up a corresponding drain on financial resources. Technical perfection will also be affected in terms of the stage(s) at which you involve an outside individual or organization. It is perhaps by using this approach, then, that you will be in the best position to make any necessary trade-offs among time, money and the validity and reliability of your assessment. However, this approach also requires the most attention to communication between the institution and the external contractor and the most care in delineating who is responsible for what activity. It is exceedingly easy to ruin the evolution and scheduling of a needs assessment if the various parties involved are not in agreement as to who is supposed to do what when.

The cost of various combined approaches in terms of payments to an outside contractor can range from a few hundred dollars (for independent consultation on a survey design) on up to virtually the entire amount you would expend to contract for the total assessment.

SUMMARY

Figure II-3 on page 33 summarizes the relative advantages and disadvantages for the three approaches to conducting a needs assessment described in the preceding sections. This is followed by a flow chart (Figure II-4) which you can use to assist you in the selection of the most suitable approach for your college or district.

FIGURE II-3

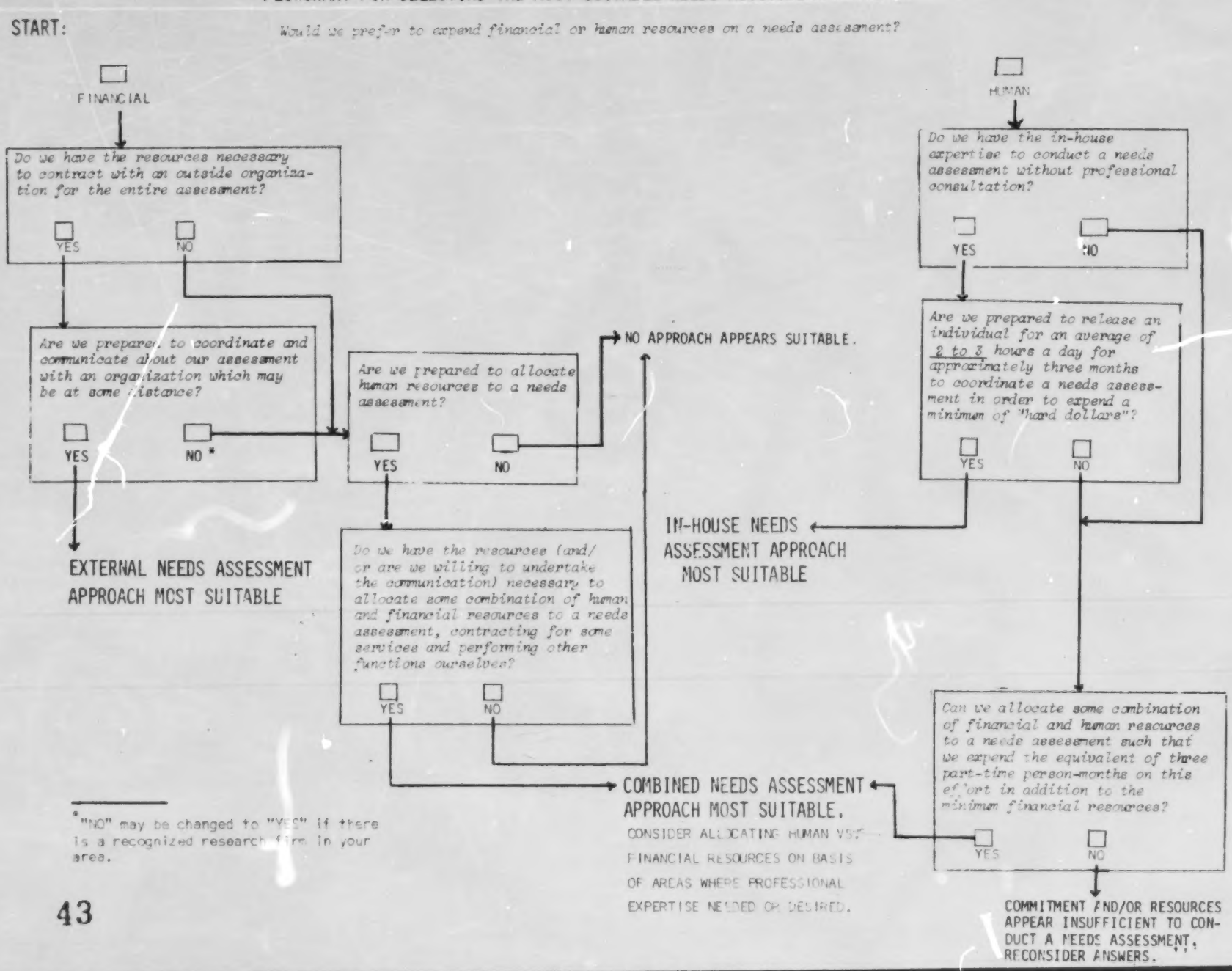
APPROACHES TO CONDUCTING A NEEDS ASSESSMENT

Advantages and Disadvantages

	Advantages	Disadvantages
IN-HOUSE ASSESSMENT	- Relatively low dollar expenditure - Responsiveness to changing local circumstances - Can be unifying and exciting experience	- High demand on human resources - Need for in-house expertise
EXTERNAL ASSESSMENT	- Low demand on human resources - Assurance of valid and reliable data - Objectivity of outside organization	- Relatively high dollar expenditure - Difficulty of communication at a distance
COMBINED EXTERNAL AND INTERNAL ASSESSMENT	- Moderate demand on human resources - Moderate dollar expenditure - Greater assurance of valid and reliable data - Degree of objectivity from outside participant	- High need for communication and careful delineation of responsibilities

FIGURE II-4

FLOWCHART FOR SELECTING THE MOST SUITABLE NEEDS ASSESSMENT APPROACH


START:
Would we prefer to expend financial or human resources on a needs assessment?
FINANCIAL
HUMAN
Do we have the resources necessary to contract with an outside organization for the entire assessment?
YES
NO
Are we prepared to coordinate and communicate about our assessment with an organization which may be at some distance?
YES
NO *
EXTERNAL NEEDS ASSESSMENT APPROACH MOST SUITABLE
Are we prepared to allocate human resources to a needs assessment?
YES
NO
NO APPROACH APPEARS SUITABLE.
Do we have the resources (and/or are we willing to undertake the communication) necessary to allocate some combination of human and financial resources to a needs assessment, contracting for some services and performing other functions ourselves?
YES
NO
COMBINED NEEDS ASSESSMENT APPROACH MOST SUITABLE.
CONSIDER ALLOCATING HUMAN VS. FINANCIAL RESOURCES ON BASIS OF AREAS WHERE PROFESSIONAL EXPERTISE NEEDED OR DESIRED.
Do we have the in-house expertise to conduct a needs assessment without professional consultation?
YES
NO
Are we prepared to release an individual for an average of 2 to 3 hours a day for approximately three months to coordinate a needs assessment in order to expend a minimum of "hard dollars"?
YES
NO
IN-HOUSE NEEDS ASSESSMENT APPROACH MOST SUITABLE
Can we allocate some combination of financial and human resources to a needs assessment such that we expend the equivalent of three part-time person-months on this effort in addition to the minimum financial resources?
YES
NO
COMMITMENT AND/OR RESOURCES APPEAR INSUFFICIENT TO CONDUCT A NEEDS ASSESSMENT. RECONSIDER ANSWERS.

*"NO" may be changed to "YES" if there is a recognized research firm in your area.

III. STEPS IN CONDUCTING AN IN-HOUSE NEEDS ASSESSMENT

OVERVIEW

The decision to conduct an in-house needs assessment is the first in a series of decisions you will be making as you plan the approach you are going to take. Fortunately, it is also probably the most difficult. For the most part, the remaining decisions are either administrative or technical in nature.

By this point, you undoubtedly have at least some notion of why you want to conduct a needs assessment (other than the fact that this Handbook is utterly persuasive in its enthusiasm for such an endeavor). You also probably have a general idea of how you intend to proceed. In all probability, however, you have not decided:

- Whom Do We Want To Involve?

Nor have you probably addressed the details of:

- What Do We Want To Find Out?

In practice, these decisions are inter-related and interdependent, and you may find yourself addressing the second issue first. In most instances, however, at least a preliminary decision regarding involvement will have to be made before the assessment content can be determined.

With assessment participation and content at least tentatively established, you will be ready to turn to the more technical decisions involved in planning your assessment. These decisions will involve answering the following questions:

- How Are We Going To Ask Our Questions?
- Precisely What Are We Going To Ask?
- Whom Are We Going To Ask?

These three questions having been answered, the decision-making phase of the assessment will be temporarily at an end and you will be ready actually to implement your survey. As you proceed in this direction, your role will shift from planner (or facilitator of planning) to coordinator of the following:

- Scheduling the Assessment
- Recruiting and Training Staff
- Supervising the Assessors

In an efficient needs assessment, many of these logistical arrangements will proceed simultaneously with the last two planning decisions. However, they are so markedly different in nature and in their demands from the planning and decision-making activities that they in effect constitute a separate phase of the assessment.

The assessors having assessed, you will finally be in a position to ask:

- What Did We Find Out?

  And

- What Does It Mean?

On the basis of the answers to these questions you will then be able to decide:

- How Do We Report Our Findings?
- What Kind of Publicity Would Be Appropriate?

In sum, there are 13 basic steps involved in conducting an in-house needs assessment, which fall into three major phases. These phases and the corresponding steps are outlined in Figure III-1 on page 38.

FIGURE III-1

OVERVIEW OF STEPS IN CONDUCTING AN IN-HOUSE NEEDS ASSESSMENT

PHASE I: PLANNING AND DECISION-MAKING

STEP 1: Whom Do We Want to Involve?

STEP 2: What Do We Want to Find Out?

STEP 3: How Are We Going to Ask Our Questions?

STEP 4: Precisely What Are We Going to Ask?

STEP 5: How Do We Organize Our Questions?

STEP 6: Whom Are We Going to Ask?

PHASE II: IMPLEMENTING AND COORDINATING

STEP 7: Recruiting and Training Staff

STEP 8: Scheduling the Assessment

STEP 9: Supervising the Assessors

PHASE III: ANALYSIS AND REPORTING

STEP 10: What Did We Find Out?

STEP 11: What Does It Mean?

STEP 12: How Do We Report Our Findings?

STEP 13: What Kind of Publicity Would Be Appropriate?

In the sections which follow, each of these phases and steps is described and discussed in detail. Where applicable, the experiences of participants in the Project are used to illustrate the relative advantages and disadvantages of various decisions and courses of action.

PHASE I: PLANNING AND DECISION-MAKING

STEP 1: WHOM DO WE INVOLVE?

It is probably safe to say that a needs assessment proceeds most smoothly, efficiently and logically if a minimum number of people are involved. It is also true, however, that this approach runs the risk of alienating those who are not involved and thereby coming up with a product which is not generally accepted. Thus the first - and perhaps the most important - planning decision you will need to make is:

- To Committee or Not To Committee?

In all probability, your style, the standard operating procedure at your institution and the presence or absence of an appropriate existing committee (e.g., a long-range planning committee) will make the decision for you. As you ponder this issue, however, you may wish to bear the following experiences of Project participants in mind:

- Actively involving a committee in a needs assessment will probably double the elapsed time needed to complete it.
- Committee members who become involved in needs assessments tend to become "instant experts" on survey research. Doing your homework in the expectation of critical questions (e.g. What about the differences between respondents and non-respondents? How can this approach reach sufficient minority and low-income residents?) will probably be a necessity.

- If a committee does become actively involved, total confusion may result unless *CONCRETE* plans (including a list of proposed questions) are developed in advance of and presented to the *FIRST* committee meeting.

In lieu of a formal committee, you might want to consider establishing a small planning group which is either representative of the institution as a whole or composed of generally respected and hard-working people.[1] (In any event, those who are directly involved in assessment implementation should ideally be both hard-working and highly organized. This type of undertaking requires considerable energy and coordination.)

Regardless of whether you use a planning group or a committee, it is probable that any needs assessment should solicit the input and efforts of at least three or four people. At a minimum, this level of involvement will lend credibility to the results and preclude the possibility of a single individual becoming overburdened by the assessment's demands.

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[1] The most efficient needs assessment conducted during the course of the Project was spearheaded by such a planning group, consisting of the administrators for instruction and community services, the academic senate president and a secretary/coordinator.

As the planning phase proceeds beyond the theoretical and into the practical, five key people will need to be identified and actively involved in the Project:

- An overall coordinator, probably an administrator (in all likelihood the unsuspecting soul who thought up this crazy idea in the first place - i.e., you, dear reader)
- A data processing/programming specialist
- A specialist in key data entry
- A supervisor for day-to-day assessment activities
- A secretary or clerk-typist

In many instances, the programming and key data entry specialists will be one and the same person, although in some institutions these are different individuals. Also, several Project participants found it highly successful to give the secretary to the assessment "double duty" as the assessment supervisor. This worked particularly well and was apparently well received in instances in which the supervision of interviewers was involved.

Finally, if responses are to be obtained via personal or telephone interviews, you will need to identify:

- Someone to recruit and screen interviewers
- Someone to train interviewers

The former will probably be someone in personnel or student placement; the latter is most likely to be either a research specialist, an instructor of social sciences or a business/marketing instructor.[2]

In sum, even absent a committee, conducting an in-house needs assessment will usually require the involvement of somewhere between five and ten staff and/or faculty members. For most of these people, however, the extent of that involvement will be limited; only the overall coordinator, the supervisor and the secretary will need to plan a continuous level of effort.

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[2] If the experience of the Project is any indicator, many community college districts simply do not have people on their faculties or staffs who are familiar with the training of interviewers. If some type of interview approach is selected, it might be wise to plan the allocation of a few hundred dollars to hire a professional for this task.

STEP 2: WHAT DO WE WANT TO FIND OUT?

Once you have identified the participants in your needs assessment, it is time to begin to get specific about what you want the assessment to accomplish for you. That is: you need to determine the *PURPOSE, GOALS* and *OBJECTIVES* of your study.

But you already know what they are, right? Otherwise how could you have decided to conduct one in the first place? Well . . . maybe . . . if you're lucky. For if experience holds true, your purpose, goals and objectives are probably fairly vague at this point; you have a general idea of what you want to achieve, but it is far from being operational. If you fail to take the time to make your goals and objectives concrete at this juncture, the fact that you really *DON'T* know what information you are looking for will become painfully obvious when you try to develop the specific questions to be asked.

As was said before, changing but one or two words in a survey question can drastically alter both its meaning and the nature of the information which it generates. It is therefore usually the case that:

> *If you don't know precisely what you want to find out in conducting an assessment, the chances are excellent that you won't find out whatever it is you thought you were going to.*

In the long run, it is probable that the extent to which your assessment goals and objectives are clearly and precisely stated will be the most important variable in determining the success or failure of your survey.

You will probably find that your committee or planning group will be of the greatest value to you during this planning step. One caution is in order, however. It is equally probable that every member of this group will have a different set of information needs and curiosities about the community and its preferences. Unfortunately, however, the amount of information a survey can generate is rather severely limited. Accordingly, if you throw the topic of goals and objectives wide open, you are likely to wind up with ten times more subjects than you can possibly cover. In the experience of most, this state of affairs can only result in a painful and frequently unpleasant process of narrowing the scope of the study back down to a manageable size.

Assuming that you are neither a committee of one nor a dictator, some input is in order at this juncture. In most instances, however, this input will need to be focused before general discussion commences. It would therefore behoove you to start this process by developing a draft statement of purpose and series of goals and objectives to which committee or planning group members can react. An example of such a document, developed by the President of Contra Costa College, is provided in the Technical Supplement. This can then be subject to the additions, deletions or modifications of the group.

The *PURPOSE* of your particular study will probably be unique to your institution. It might range from "to learn more about the community's perceptions of the institution" through "to validate institutional objectives" to "determine the optimal role of the institution in the community" or "to assist in establishing institutional priorities." Needless to say, each of these statements is sufficiently broad to encompass a wide variety of more specific goals. It is nevertheless important to make some general statement of purpose at the outset in order to be clear on what in the world you want the information *FOR*. If you fail to do so, you may well find yourself in quite a dilemma when the results are in and someone asks you what you are going to do with them besides put them between the covers of an impressive-looking report.

A statement of purpose, then, outlines the use or uses to which you intend to put the assessment results. Its implication in most cases is that some action will be taken (or at least proposed) on the basis of the assessment outcome.

Unlike the assessment's statement of purpose, your *GOALS* need not imply a resulting action. Goal statements can cover virtually any topic of concern to the institution and will probably come from a variety of quarters. Consider the following examples from Project participants' assessments:

- To determine the level of awareness of the institution in the community
- To determine the relative importance among residents of the institution's major functions
- To find out how the community evaluates the institution's performance
- To assess awareness of policies on who may enroll and what costs there are
- To determine the relative strength of possible barriers to attendance
- To find out why selected residents are enrolled in other institutions
- To explore potential students' perceived needs for various types of counseling and supportive services
- To determine what fields potential students are interested in studying
- To prioritize selected community services activities
- To ascertain the level of interest in proposed occupational offerings

Although each of these inquiries should be of concern to the community college as a whole, many of them reflect the information needs of a particular sector (e.g., instruction, occupational education, student services, community services). They are, however, interrelated: if occupational education is a priority among residents whereas community services is not, the ranking of community services activities will have a considerably different meaning than it would if community services were the highest priority. It is therefore important in developing goals to consider: (1) the relationship among the institution's various functions; (2) the extent to which any given piece of information might clarify that relationship; and (3) the contribution any given piece of information might make to an understanding of a particular area's role in the institution's overall mission of serving the community as a whole. (This approach will also tend to preclude battles among segments as to whose information needs are most important.)

Once those who are involved in the assessment have agreed on the goals of the survey, specific *OBJECTIVES* need to be developed. In this context, an objective can be defined as:

> *An information item which will serve to illuminate the area of concern expressed in the goal statement*

Please note that this definition contains the term "information item" rather than the word "question." It is very tempting at this juncture to jump ahead to the design of actual questions rather than considering the information these questions are supposed to elicit. However (to be redundant about the matter): if you don't know what you want to know, you can't design a question. So be patient, and take the time to battle out the content before you proceed to the phrasing.

In developing assessment objectives, it is wise to be on the lookout for two phenomena which almost invariably arise and which can wreak havoc with the process. These are:

- The generation of "wish lists"
- A failure to view each goal comprehensively and in all its complexity

A "wish list" is another way of saying "things that would be nice to know." In the development of assessment objectives, wish lists tend to arise because (1) participants don't really accept the established goals; (2) people have information interests which are at best peripheral to the goals but appear germane; or (3) it is human nature to want to know everything one could possibly know about a subject. There is nothing inherently wrong with wish lists; they just won't work in the context of a survey because of the necessity that surveys be relatively brief. To avoid unnecessary wrangling along these lines, it is helpful to approach every proposed objective with one or both of the following questions:

- What aspect of the goal does that address?
- In what way does that increase our understanding of the goal?

The other phenomenon - a failure to be comprehensive in viewing each goal - is less easy to detect during the planning stages, and may well not be discovered until all of the responses are in. Moreover, because it tends not to cause internal dissension (unlike wish lists), it is easy to overlook. In the long run, however, it can have a far more devastating effect on the outcome.

Basically, what is of concern here is the development of incomplete or inadequate information to address the question(s) implied by a given goal. Perhaps the simplest illustration of this is a priority-setting goal. If, among the set of all possibilities which could be prioritized, one is omitted, then the responses will be incomplete. Moreover - and more importantly - the results will be fundamentally misleading and possibly inaccurate because one will have no way of knowing what priorities would have been established had all of the options been included.

An example from the pilot tests will illustrate how important comprehensiveness is and how complex it can be to achieve. Suppose that one of your goals is to:

- Identify and explore the preferences and needs of displaced homemakers, women re-entering the labor market and those seeking non-traditional occupations

In most respects, the law (the Vocational Education Amendments of 1976) is highly specific in defining the terms in this statement. Moreover, it is highly complex in that its definitions are stated in "If *X and Y*" or "If *X but not Y*" terms for each of several groups of individuals (e.g., those seeking employment or those working part-time but seeking full-time employment.)[3] This sets up a situation in which your questions appear to be redundant, and it is very easy to eliminate a critical variable on that basis. Doing so, however, can result not only in "losing" one group but in being unable to quantify the total population of those to whom the sex equity provisions of the Act apply.[4]

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[3] Specifically, Section 120 of the Vocational Education Act (P.L. 94-482) provides that funds made available under the Act may be used to offer vocational education programs for: "(i) persons who had solely been homemakers but who now, because of dissolution of marriage, must seek employment; (ii) persons who are single heads of households and who lack adequate job skills; (iii) persons who are currently homemakers and part-time workers but who wish to secure a full-time job; and (iv) women who are now in jobs which have been traditionally considered jobs for females and who wish to seek employment in job areas which have not been traditionally considered for job areas for females, and men who are now in jobs which have been traditionally considered jobs for males and who wish to seek employment in job areas which have not been traditionally considered job areas for males."

[4] A comprehensive approach to this particular topic, which demonstrates its apparent redundancy, is included in the assessment designed by the Ventura County Community College District. This survey can be found in the Technical Supplement.

In short, this is the first of many points at which attention to detail becomes critical. To avoid errors in this regard, the following questions need to be asked as each goal is examined:

- What information will address each of the components of this goal?
- If we obtain X, Y and Z information, will it answer the question implied by this goal?

A final illustration will serve to demonstrate what can go wrong and what a reasonable yet comprehensive approach might be. Take, for example, the relatively straightforward goal: To determine the level of awareness of the institution in the community. Here is a wish list of objectives along with some speculation about what might be going through the proposer's mind:

OBJECTIVE STATEMENT	UNDERLYING THOUGHTS
Can respondents identify us?	(Do they know who we are?)
If they can't identify us, have they ever heard of us?	(We'll give them a second chance.)
How much do they know about us?	(Do they *really* know who we are?)
What have they heard about us?	(*Everybody* talks about us.)
Which of our programs can they identify?	(*Everybody's* heard about *my* program.)
How did they hear about us?	(I bet my newspaper ads were a wild success.)
Do they know other people who know about us?	(We can show *lots* more awareness than just those we survey.)

In and of themselves, there is nothing wrong with any of these objectives other than the last one.[5] The further down the list one moves, however, the further one moves away from the goal. In what way, as an example, does the manner in which people heard about an institution address the extent or "level" of awareness itself? Moreover, one would consume an enormous amount of resources addressing but one of several goals were one to pursue all seven objectives.

For most purposes, the first two objectives should suffice; the third might be viewed as an optional nicety to be included or discarded depending on the total number of objectives proposed for all goals. Were one merely to pursue the first objective, however, the results might prove to be somewhat inadequate.

The first two objectives in this series are typically pursued by asking two questions. The first is similar to, "Can you name the community college in your area?" If the respondent fails to do so, he or she is "aided" in responding by being asked something to the effect of, "Well, as it happens, the community college in your area is XYZ College.

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[5] From both a methodological and statistical point of view, asking respondents about others requires considerable caution. In this instance the speculative underlying thought is invalid; one cannot increase the numbers by inquiring about others.

Before I mentioned it, had you ever heard of this college?"[6]

In most areas of California roughly nine out of ten people can name the local community college without assistance. In and of itself, this is a rather impressive statistic. Perhaps even more remarkable, however, is the fact that the number who are unaware of the local college drops to less than one in twenty-five when the name is mentioned.[7]

Given this information, it should be clear that unless one is exceedingly careful in writing up one's results, one will underestimate the community's knowledge quite markedly if one has only pursued the first objective. More comprehensive information could be obtained by including two objectives within this goal.

Needless to say, this conclusion is based in large part on prior information. Were this information not available, the decision would have to be based on judgment. Perhaps regrettably, this is a general rule in all instances other than those where "facts" are called for (such as displaced homemakers, et. al.):

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[6]This second question is only possible if responses are obtained through personal or telephone interviews. Clearly, one would prejudice the matter beyond redemption if one were to put these two questions in writing.

[7]The critical measure of awareness is unquestionably "unaided" awareness; "aided" awareness questions are typically used to introduce names into the conversation. Nevertheless, a "yes" response upon being aided suggests a certain level of knowledge and ability to respond to succeeding questions.

DECISIONS REGARDING THE COMPREHENSIVENESS OF OBJECTIVES ARE JUDGMENT CALLS. (AND YOU THOUGHT THIS WAS ALL CUT AND DRIED.)

In making these judgments, the best procedure is to begin with more global objectives and move toward narrower ones. As each objective is added, consider the following questions:

1. What will this tell us?
2. Will this (in combination with previous objectives) give us all the information we need?
3. Is there other information we *NEED* to clarify the situation?
4. What will that information tell us?

(Please note the emphasis on the word "need" above. This process runs the risk of developing wish lists if the "need to know" concept is not emphasized.)

Figure III-2 on pages 56 and 57 demonstrates one way in which these questions and the resulting judgments might be approached, using the wish list on page 52 as an example.

FIGURE III-2

PROCESS FOR DETERMINING
THE COMPREHENSIVENESS OF ASSESSMENT OBJECTIVES

OBJECTIVE	QUESTIONS	RESPONSES
Can respondents identify us?	1. What will this tell us?	1. Number that can name us "off the top.
	2. Will this (in combination with previous objectives) give us all the information we need?	2. Maybe not - what if they can't?
	3. Is there other information we *need* to know?	3. If they can't name us - have they ever heard of us?
	4. What will that information tell us?	4. Number aware at all vs. number unaware.
If respondents can't identify us, have they ever heard of us?	1. What will this tell us?	1. Number aware at all vs. number unaware.
	2. Will this (in combination with previous objectives) give us all the information we need?	2. Maybe not - this is only name recognition.
	3. Is there other information we *need* to know?	3. How much respondents (think they) know about us.
	4. What will that information tell us?	4. Extent to which awareness is more than name recognition.

OBJECTIVE	QUESTIONS	RESPONSES
How much do they know about us?	1. What will this tell us?	1. Extent to which awareness is more than name recognition.
	2. Will this (in combination with previous objectives) give us all the information we need?	2. a. Awareness of name. b. Awareness of what we are or do.
	3. Is there other information we *need* to know?	3. No.
	4. What will that information tell us?	4. (Not applicable.)

The last answer to question No. 3 - the one which stops the questioning process - is where the judgment call is made. Participants can think of nothing further which will add to an understanding of the situation without exceeding the scope of the goal. In the final analysis, then, although the four questions outlined above will facilitate the decision-making process, it is the thoughtfulness and thoroughness of those involved in designing the assessment which will be crucial to the success of this step.

In summary, the optimal approach to the question *"WHAT DO WE WANT TO FIND OUT?"*:

- Proceeds from an assessment purpose which implies that some action will be taken on the basis of the results
- Solicits focused input on goals and objectives from a planning group or committee
- *Avoids designing questions, focusing instead on the content of goals and objectives*
- Ensures that objectives are necessary and sufficient to implement goals by avoiding wish lists yet being comprehensive.

STEP 3: HOW ARE WE GOING TO ASK OUR QUESTIONS?

Having seen an example or two, and with objectives well established, the reader will now undoubtedly be ready to forge ahead into the design of questions to address the institution's succinct yet comprehensive assessment objectives. Unfortunately, however, there is one more decision to go. And that decision, which will play a major role in determining the actual phrasing of your questions, is: How are we going to ask the questions we decide to ask?

There are three fundamental ways in which a needs assessment can be conducted: by mail, in person, and by telephone. Each has both advantages and disadvantages, and it is safe to say that none is "perfect" in its ability to measure community preferences. In deciding which one to utilize, you will probably find yourself making trade-offs on the basis of:

- The purpose of your assessment
- The level of sophistication you require
- Available resources

The sections which follow outline the advantages and disadvantages of each approach and the factors which need to be considered in selecting from among them.

Mail Assessments

The mailed survey or assessment is a staple of American educational research, and as such it is undoubtedly familiar to everyone in California's community colleges. "Let's send out a questionnaire" has become a virtually automatic reaction to the suggestion of an information need, and most districts are quite comfortable with this type of survey.

The primary *ADVANTAGES* of a mail assessment relate to its familiarity, the nature of the responses and its relatively low cost. The following considerations are particularly important:

- Because it is a familiar technique, a mail survey will probably require less explanation or justification than the alternatives
- Mail surveys avoid the problems associated with interviewer bias (e.g., "leading the witness;" inaccurate observation or recording)
- Mail surveys increase the probability of thoughtful replies, because respondents can answer the questions at their leisure and convenience.
- Mail surveys tend to elicit more honest responses than other approaches, particular insofar as sensitive or personal questions are concerned, because there is no potentially embarrassing human contact involved

- Mail surveys can be widely distributed (e.g., in sparsely populated rural areas) without increasing the cost of the assessment
- A mail survey will generate more completed assessments per dollar expended than any other method
- In their less sophisticated forms the overall cost of mail surveys can be fairly low.

The primary *DISADVANTAGES* of mail surveys lie in the frequent inability to identify adequately one's target population, the efforts necessary to generate an "acceptable" response rate[8], and the nature of those who respond. The following are of primary concern in this regard:

- In many instances, there is no comprehensive list of the population to be surveyed - particularly insofar as the general public is concerned. The typical alternatives in the case of a community-wide survey are to sample from less than comprehensive lists (e.g., telephone directories) or to bulk mail to "residents" - a costly and frequently unproductive tactic.

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[8] A survey's *response rate*, also referred to as the *rate of return*, can be defined as the number of responses received as a percentage of potential respondents contracted. Thus if 1,000 assessment surveys were mailed and 100 completed surveys were returned, the response rate would be 10% (100 - 1,000 x 100 = 10%).

- Initial response rates to mail surveys tend to be exceedingly low (typically less than 20%). This is particularly true in cases in which most of those being surveyed have no vested interest in the subject at hand, such as the general public. (One could expect a somewhat higher response rate if one were to ask community college presidents about a proposed law concerning the maximum permissible salary for community college presidents.)

- Given a low rate of return, the question then becomes: What would the rest of the people have said had they responded? How different are they from those who did respond? With respect to mail surveys, all of the available evidence suggests that the differences are substantial and that a small response will misrepresent the community as a whole.[9]

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[9]Discussions of this issue and its effect on survey findings can be found throughout the survey research literature. Those who are interested will find a good overview along with numerous references in Paul L. Erodos' Professional Mail Surveys (1970).

- Efforts to increase the rate of return to an "acceptable" level (certainly 50% to be adequate and at least 60% in the opinion of some to be "good")[10] can be extremely costly and may yield less than sufficient results, particularly if the subject is not of pressing interest to the community.
- It is probable that the amount of information which a survey mailed to the general public can request is fairly limited and that its nature needs to be relatively simple. Lengthy or complex mail surveys may tend to generate either insufficient returns or a high percentage ofinaccurate and/or incomplete returns.[11]
- Mail surveys seriously underrepresent those who are illerate or those who are uncomfortable with the printed word. Moreover, unless special efforts are made to identify and provide translations for them, those with a minimal or non-existent command of the English language will also be underrepresented.

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[10] See, for example, Earl R. Babbie's Survey Research Methods (1973).

[11] Kanuk and Berensen (1975) cite somewhat mixed evidence with respect the effect of survey length on response rate. They conclude: "Common sense suggests that shorter questionnaires should result in higher response rates than longer ones because of the limited demand they make on the respondent's time; however, the evidence gives little support to this view." This conclusion nonwithstanding, the author's preference is to follow both common sense and past experience with incomplete or hastily completed returns.

In general, then, the mail needs assessment is probably most appropriately utilized under the following circumstances:

- If the purpose of the assessment is to obtain a general sense of the preferences of those who will tend to respond rather than a representative, community-wide response

OR

- If community interest and involvement in the institution are high *and* if the resources are available to conduct follow-up mailings such that a 50% or higher rate of return can be achieved

OR

- When resources are severely limited and some information is perceived as being better than no information

AND

- If the information desired is limited and fairly simple to inquire about

Person-to-Person Assessments

Assessing the community's preferences in person is also not unfamiliar to community colleges; at least two districts in California have undertaken such surveys in the past few years. [12] Until fairly recently, moreover, the personal interview was the preferred survey technique among professional market research firms (although this is no longer the case in most instances).

The *ADVANTAGES* of a person-to-person assessment are as follows:

- Significantly more (and more complex) information can be elicited during a face-to-face interview than either by mail or during a telephone interview
- Given highly trained interviewers, more in-depth responses and greater insights into respondents' perceptions can be obtained

[12] See, for example, San Diego Community College District's Districtwide Needs Assessment Report (1975) and the "Gavilan Joint Community College District Field Assessment" (1980). Personal contacts were also made for Cerritos College's Occupational Needs Assessment (1979) and for Merced Community College District's Needs Assessment Project in Community Education (1977-79).

- Factual accuracy can be increased because the respondent's records can be checked [13]
- Visual aids can be employed if necessary to clarify or display the content of a question
- The public relations benefits in a relatively small community can be substantial [14]

The *DISADVANTAGES* of this approach are the following:

- It is by far the most expensive needs assessment technique. Travel time and costs are frequently prohibitive, particularly in less densely populated areas

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[13] Clearly, this statement applies only to personal interviews conducted in respondents' homes. Interviews in congregate sites (e.g., meetings or shopping malls) do not have this advantage. With respect to community-wide surveys, however, the sampling biases inherent in on-site interviews are such that this approach is not particularly appropriate.

[14] It is important to distinguish between viewing positive public relations as a *by-product* of an assessment rather than an *objective* thereof. In order for the results to be valid, an assessment's objectives must be impartial - i.e., they must seek to understand rather than to create perceptions. If the study is carried out in a courteous and respectful manner, one *outcome* may be an enhancement of the institution's image in the community. To guard against the introduction of biases, however, this serendipitous occurrence should not be viewed as an assessment objective.

- If the sample is well-designed (i.e., in most instances geographically dispersed) and if call-backs are included in survey design, elapsed time becomes a factor. Even a modest face-to-face survey of this sort can probably not be completed in less than a month.[15]

- A cadre of interviewers needs to be thoroughly trained in order to preclude the introduction of excessive variability and bias into the survey.

- Supervision of interviewers is at best difficult and frequently impossible. As a result, the quality of the results will almost always be questionable.[16]

- People are increasingly reluctant to open their doors to strangers, both because of the widespread increase in the rate of crime and because the word "survey" has been abused by opportunistic sales people seeking an entre'. As a result, it is becoming more and more difficult to obtain a sufficient and representative sample by going door-to-door. (Interviewers

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[15] Elapsed time can be a major concern in instances in which the subject being inquired about is in the public eye. Consider, for example, a community in which the superintendent and the board are publicly feuding. If the superintendent is fired mid-way through the assessment, attracting considerable media attention, one will have no assurance that the "before" and "after" responses are comparable. Each week of elapsed time increases the possibility that such an occurrence will arise and bias the results.

[16] Blankenship (1977) suggests that cheating in personal interviewing may be on the rise - cheating which only sophisticated verification checks can catch in its several forms. Some professional firms are decreasing their use of this survey method because of their lack of control over the interviewing itself.

are also reluctant to work in certain neighborhoods and may even risk harm if they do.)

In sum, the use of a person-to-person needs assessment approach is probably most appropriate if the following circumstances apply:

- You want a lot of information, at least some of which is complicated

OR

- You need to use visual aids to convey or clarify selected questions

AND

- You have access to the expertise necessary to train interviewers

AND

- You have the resources necessary to cover travel time and expenses in addition to the actual interviewing costs

Telephone Assessments

The telephone survey is perhaps the least familiar approach to needs assessment. As a survey research technique, it is the newest of the three possible approaches, although it is now widely recognized among professionals in the field as being the most cost-effective. Its popularity as an assessment tool among community colleges also appears to be increasing.[17]

The first telephone survey was conducted in the 1920's. (By way of contrast, the first "mail" survey is believed to have been conducted, by courier, in 1577.) It was not until the 1950's, however, that this technique had the potential to reach a sizeable percentage of the population.[18] By 1976, on the other hand, an estimated 95% of all households had telephones, with the result that telephone surveys can now reach the vast majority of the population.

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[17] The Los Angeles Community College District conducted one in 1976, Monterey Peninsula College conducted one in 1978 in conjunction with its accreditation self-study, and Santa Ana College, Sierra College and the Marin Community College District each conducted one in 1979. In 1980, all seven participants in the Vocational Education Needs Assessment Project elected to use the telephone technique. (This latter occurrence may well have resulted less from a general trend than from two aspects of the Project itself: the fact that the statewide survey was conducted by telephone; and the author's concurrence with the view that a telephone survey is the most cost-effective needs assessment method.)

[18] The telephone was invented in 1876, but did not come into widespread use until well into this century. It was not until the 1940's that over half of all households contained telephones. (Blankenship, p. 18.)

The *ADVANTAGES* of telephone assessments are as follows:

- The cost of reaching a dispersed sample is considerably less than in a door-to-door survey or in most mail surveys which seek a 50% or greater rate of return
- Because, as Blankenship notes, the telephone is an "imperative device," cooperation is somewhat easier to obtain: people typically answer the telephone regardless of what they are doing
- Response rates will tend to be higher than in personal or mailed surveys because call-backs are relatively simple to make
- Respondents will tend to be more frank than in a person-to-person interview
- The biases introduced by an interviewer's appearance and mannerisms can be avoided
- If the telephoning is conducted in a central location, thorough quality control can be exercised

Despite these advantages over both mail and person-to-person surveys, telephone assessments do have their *DISADVANTAGES:*

- They have a built-in bias against households without telephones. Available evidence indicates that these households are more likely to have minority and low-income residents than households with telephones. (Tull and Albaum 1977)

- If telephone numbers are obtained from published directories, the sample will be biased against unlisted numbers, including those not listed by request, those too new to be listed and those listed incorrectly. These omissions remove over 20% of the households in urbanized areas in a western state such as California from the population being surveyed - households which have been shown to differ both in their perceptions and in their characteristics from listed households.[19]

- The amount of information which can be requested over the telephone is limited, although it is considerably more than conventional wisdom might suggest. Recommendations as to a maximum interview length range from 10 to 15 minutes to between 20 and 30 minutes - in any event less than the maximum length for a personal interview. (The author's recommendation is a maximum of 15 minutes on a topic of perhaps general but certainly not overwhelming interest, such as occupational education in community colleges.)

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[19] Blankenship (pp. 68-69) cites a variety of studies on the characteristics of unlisted households and the nature of their responses to surveys. That there are differences between those who have listed numbers and those whose numbers are unlisted is well-established. Inasmuch as this is a relatively new area of inquiry, the remaining evidence is somewhat conflicting. It is fairly certain, however, that unlisted numbers are proportionally more prevalent among city dwellers, blacks, families wity young heads and those at the lower educational levels.

- Highly complex questions, or questions which the respondent really needs to look at in order to comprehend, cannot be effectively asked over the telephone.
- As with person-to-person assessments, interviewers need to be trained to conduct the interviews.

Telephone assessments, in sum, are probably most appropriately conducted under the following circumstances:

- The amount of information you are seeking is relatively limited and not overly complex

AND

- You have the resources and expertise necessary to circumvent the use of published directories (see Step 5 below)

AND

- You have access to the expertise necessary to train interviewers as well as the resources necessary to pay them

Summary

The relative advantages and disadvantages of the three basic approaches to needs assessment are summarized and contrasted in Figure III-3 on pages 74 and 75. From this chart, it should be clear that none of the three approaches is "perfect" in terms of its ability to reach all segments of the community or to maximize all types of resources. By considering your survey purpose, the nature of your community and the resources available to you, however, you should be able to select an approach which is *MOST SUITABLE FOR YOUR PARTICULAR INSTITUTION'S OBJECTIVES AND CHARACTERISTICS.*

FIGURE III-3

APPROACHES TO CONDUCTING A NEEDS ASSESSMENT

SUMMARY OF ADVANTAGES AND DISADVANTAGES

	MAIL	PERSON-TO-PERSON	TELEPHONE
GENERAL	- Will require minimum justification - Unsophisticated forms will yield general information at lowest cost	- Will probably need more explanation and/or justification having not been traditionally undertaken by community colleges - At various non-minimal cost levels, will generate more reliable results	
SAMPLE	- Underrepresents those uncomfortable with printed word - Underrepresents limited-or non-English-speaking in the absence of special efforts	- May eliminate security - conscious residents - May eliminate certain "dangerous" neighborhoods	- Eliminates households without telephones (5%) - If directories are used, eliminates unlisted and incorrectly listed numbers (over 20%)
RESPONSE RATE	- Will be relatively low unless extra effort is expended and/or topic is of exceedingly high interest	- Can be quite high with persistence and pleasantry	- Can be exceedingly high with persistence and pleasantry
INFORMATION REQUESTED	- Should be limited in amount and simple to ask for	- Can be extensive and quite complex - Can be in-depth - Can require visual aids	- Should be relatively limited and not excessively complex to ask for
TRAINING	- No special training needed	- Interviewer training needed	- Interviewer training needed

	MAIL	PERSON-TO-PERSON	TELEPHONE
DATA COLLECTION	- No interviewer bias	- Interviewer bias possible from words, appearance and mannerisms	- Interviewer bias possible from words; can be eliminated in a central location survey
ANSWERS	- Most thoughtful - Most frank, truthful - Most amenable to sensitive questions. - Factual accuracy cannot be confirmed	- Moderately thoughtful - May be guarded - Highly sensitive questions may not be appropriate - Factual accuracy can be verified	- Probably least thoughtful - Moderately frank, honest - Moderately sensitive questions acceptable - Factual accuracy cannot be confirmed
POTENTIAL PUBLIC RELATIONS VALUE	- Minimal	- High	- Moderate

STEP 4: PRECISELY WHAT ARE WE GOING TO ASK?

Finally, we've come to the point you have been waiting for: designing questions. *Before* you begin, however . . . a few hortations, cautions and recommendations are in order.

General Considerations

The first - and perhaps the *most important* - rule in designing surveys is

KEEP IT SIMPLE

In other words: Keep it short and to the point. There is no better guarantee of confusion and ultimate failure than a survey which goes on and on, wandering all over the waterfront in esoteric jargon and utterly bewildering 90% of the respondents in terms of what in the world you're trying to get at.

Specifically:

- Be sure every question relates to a particular objective of your assessment - no little extras, please. (You'll drown in questions.)

- As you work, bear in mind the realistic scope of your assessment - two pages by mail, 10 to 15 minutes by telephone, 1/2 hour to 45 minutes in person. Cutting after the fact is a painful process.
- Be sparing with words - use the minimum necessary to get the point across. Try to find one-word substitutes for four-word concepts.
- Use simple language - if a ten-year-old can't understand it, throw it out and give it another try.
- Be sure that the words and phrases you use are clear and not subject to various interpretations. Avoid ambiguities which might lead different people to respond in different ways.
- Beware of the jargon we all use and be ruthless in eliminating it. *We* know what and how complex "curriculum development" is - but for the average person, "planning what to teach" or "improving what we teach" is quite sufficient.[20]

[20]This process should also help you focus on what you really want to know. "Curriculum development" is a frightfully vague term, and admits of both the suggested alternatives. Which do *YOU* really mean?

The second point which needs to be made is a caution, and it concerns the nemesis of a goodly number of surveys, namely:

B I A S

The objectivity of your objectives nonwithstanding, it is fairly certain that there are some answers you would prefer to hear, thank you very much. In other words, you're biased. The trouble is, it's exceedingly easy to insert those biases into your questions, often without even being aware of it.

A *BIASED QUESTION* is one to which you can predict the response because it "leads the witness" by the way it's phrased. Unfortunately, if you don't make the prediction yourself and change course accordingly, someone else will. And this will probably occur when you're presenting the report, at which late date you will be informed that your results are worthless.

Also unfortunately, a single word can do the "leading." Consider the following (true) example:

OBJECTIVE: To determine whether community preference for taking classes at off-campus sites is sufficient to warrant the continuation of six off-campus centers.

YOUR BIAS: Off-campus sites are an important component of the college's outreach program. Closing them would deny opportunities to certain segments of the population.

YOUR QUESTION:	Do you prefer to take classes on the main college campus or at a conveniently located site in the community?
PROBABLE RESPONSE:	Wow, a convenient site out here . . . Sure, I prefer that.
UNBIASED QUESTION:[21]	Do you prefer to take classes on the main college campus or at a site located in the community?
NEUTRAL QUESTION:	Do you prefer to take classes on the main college campus or at an off-campus site?

Merely deleting the word "conveniently" - which in effect suggested to the respondent that your sites darned well are convenient (even though they might not be for any particular respondent) and reversing the words "located" and "site" eliminated the bias from the question. A further slight modification - eliminating the ambiguous and potentially loaded word "community" - produced a totally neutral question (which might or might not help *YOU* keep your sites - but would at least be an honest measure of the *COMMUNITY'S* preferences.)

[21] Although this question is unbiased, it is also somewhat ambiguous in that the word "community" is subject to various interpretations and connotations.

The moral of the story is: examine every word and phrase in each and every question for bias, both intentional and unintentional. Look for *LEADING* words and phrases - usually statements of value, whether positive or negative - and *LOADED* terms - words or phrases which have value-laden connotations.[22] If these are not eliminated, your findings will be legitimately subject to immediate rejection. (A *very* painful - not to mention costly - experience.)

Types of Questions: Content

For the most part, your objectives will dictate the kinds of questions you ask. There four types from which you can select: questions of current fact; questions about the past and the future; questions about opinions; and questions about motives.

Questions of Current Fact. Questions of current fact assume that the respondent possesses and can accurately report factual information about the present. For the most part, such questions are fairly straightforward - e.g., "Are you currently enrolled at

[22] It is not improbable that the value a word or phrase carries will vary from locality to locality. In the statewide survey, respondents were asked to evaluate the job community colleges are doing in providing "general education so students can explore interests and develop an understanding of themselves, of others and their environment." Because environmentalism is such a highly charged issue in San Luis Obispo County, Cuesta College changed the word "environment" to "surroundings" in order to prevent a possible biasing effect.

XYZ College?" Unless your approach gives the respondent the opportunity to look up the answers, however, you should avoid factual questions which might tax a person's immediate recall of detail - e.g., "What classes are you currently enrolled in?"

Questions About the Past and the Future. Questions about the past and the future ask the respondent to report something which is not currently going on. Both types of queries are problematical and both should be employed and interpreted with considerable caution.

Most people at best imperfectly recall the past. Thus although you might get an accurate answer about a major previous occurrence - e.g., to "When did you first enroll in XYZ College?" - you would be on pretty shaky ground to inquire about details - as in, "And what courses did you take that year?"

With respect to the future, it's fairly common knowledge that most people won't do what they say they're going to do tomorrow, let alone six months from now. Statements about the future are therefore indicative rather than predictive - and may not even be all that indicative. So if you ask, "Are you planning to attend XYZ College in the next 12 months?", please don't build a new building

or two to accommodate the amazing number of respondents who say "yes."[23]

Questions on Opinions. Opinion questions ask the respondent to state his or her attitudes toward the topic under consideration. Caution is particularly important in designing this sort of question because it is the most readily prone to bias. It is also important to phrase opinion questions such that the topic is clear and not subject to varying interpretations. "Do you think we're doing an excellent, good, fair, or poor job at XYZ College?" is an example. Job of what? In relationship to what?

Questions About Motives. Questions about motives ask the respondent to give his or her reasons for doing something, whether past, present or future. An example would be, "Why did you attend XYZ College? Was it to . . . (list of possible alternatives)?"

There is nothing inherently wrong with such a question, but it is important to realize that the respondent's stated reason (particularly given a predetermined list of possibilities) may not be the real or underlying reason. Taking the above question as

[23] Almost one-third (31.9%) of those responding to the statewide survey said they were planning to attend a local or nearby community college in the next 12 months. Were this actually to occur, it would represent almost four times the current statewide enrollment - a veritable revolution in postsecondary education.

an example, it is far more socially acceptable to respond "to prepare for work" than it is to admit that it was "because my parents said it was either that or get a job."

Only the most highly trained and skilled interviewers can tap the underlying reasons for behavior; in many instances, an experienced psychologist would be required. Clearly, this is beyond the scope of a community needs assessment and is in the long run probably not particularly productive. It is therefore wise to treat the responses to such questions with a certain amount of caution and not to place too much faith in their accuracy.

Types of Questions: Structure

The types of content described in the preceding section can be structured in one of three fundamental ways. These structures are open-ended, multiple-choice and dichotomous.

An *OPEN-ENDED QUESTION* is one which respondents are free to answer in any manner they see fit. No possibilities are suggested, nor is any structure imposed on the response. For example:

> "What was your <u>main</u> reason for attending XYZ College?"

A *MULTIPLE-CHOICE QUESTION* is one in which the respondent is given a predetermined list of possible answers from which to select. These may be discrete and independent categories (e.g., possible reasons for attending XYZ College) or they may represent some type of scale (e.g., excellent, good, fair or poor). Frequently, multiple-choice questions have a quasi open-ended quality in that they include the possibility of an "other" response. For example:

> "Which of these best describes your <u>main</u> reason for attending XYZ College . . . was it to prepare for work, to get a college degree or certificate, to improve basic skills such as reading and writing, for personal improvement or enrichment, or for some other reason?"

DICHOTOMOUS QUESTIONS force the respondent to select one of two possible responses - responses which are typically opposing and mutually exclusive. The most frequently used dichotomy is Yes/No, although there are other possibilities. As a dichotomy, the question regarding reasons for attending XYZ College might look like this:

> "Did you attend XYZ College to prepare for work or not?"
> (Yes/No)

OR

"Did you attend XYZ College to prepare for work or to get a college degree or certificate?" (Prepare for Work/Get a College Degree or Certificate)[24]

As a general rule in designing questions, it would behoove you to

BEWARE OF OPEN-ENDED QUESTIONS

This is because:

- Obtaining comprehensive and specific yet succinct responses to open-ended questions is virtually impossible by mail and requires a substantial amount of interviewer skill. As a result, what you wind up with may well be useless.
- Grouping and making sense out of potentially useful responses to open-ended questions is at best a difficult, costly, and time-consuming process.

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[24] It should be noted that neither one of these examples is a particularly good question, because the subject is simply not a dichotomous one. The first question is inefficient; several similar questions would have to be asked to cover the various possible reasons for attendance. The second question is even worse, because in excluding several possible reasons, it forces the respondent into selecting between two categories of which neither one may be applicable.

Finally, on the basis of discouraging experience: If you don't know what kinds (categories) of responses are likely to emerge, you probably haven't given the subject sufficient thought. You're going to have to come up with categories sooner or later in order to be able to analyze the responses, so you may as well do it at the outset.

There are two exceptions to this general rule:

- Using open-ended questions in a pilot study to determine what categories should be used in the final study
- Using open-ended questions to avoid the repetition of a lengthy and tedious list of known alternatives

If you have little or no idea what the responses on a particular topic are going to look like, it is frequently wise to conduct a pilot study on a relatively small sample to find out. This is a highly appropriate and frequently productive use of open-ended questions. Responses can then be examined to determine which options ought to be included in the final version.

On the other hand, if you already know what all of the options are, if they are relatively concrete (typically factual), and if the list is lengthy (more than 7 or 8 items as a general rule), then it may be appropriate to use an open-ended question in the final study. Some examples:

- In what field would this (planned) training or instruction be?
- Which instructor(s) do you have this semester?
- What method or methods of transportation do you use to get to XYZ College?

In effect, those are multiple-choice questions in which the choices are not offered to the respondent. Responses are coded after the fact using existing lists of possibilities (e.g., Taxonomy of Programs codes in the first example; a roster of current instructors in the second).

Two cautions are in order here, however. The longer the list of possibilities, the less likely you will be to get more than a few responses in any given category. Accordingly, you should first ask yourself: What meaning will the response have? Secondly, you should ask: Am I simply trying to avoid forcing all of the wonderful diversity of this topic into logical (even if somewhat imperfect) categories? If you suspect that this is the case, you are probably merely postponing the inevitable - and you may wind up in trouble.

An example from the Project will serve to illustrate the problems which can arise. The stated objective was: to determine which community services activities had been of greatest recent interest to

residents. The list of possibilities exceeded 40, so it was proposed that the questions be open-ended, to wit: (Asked of those who have attended one or more community services activities): Which one or two activities did you take part in most recently?

Some participants suggested that the various possibilities be grouped into five or six categories (e.g., short courses; theater; lectures), but this was viewed as being impossible (the list would still be too long), so the question was asked as it stood. Staff were fundamentally pleased with the results. However, the following also occurred:

- The responses were all over the waterfront, including several which weren't even answers to the question
- Computer analysis of the data was rendered impossible, with the result that all of the responses had to be tabulated by hand
- Some grouping had to be done anyway in order to make sense of the response

In short - considerably more work and interpretation were required.

One final caution about open-ended questions is in order here: in one area in which they appear to be ideal, they won't work at all. This is the perplexing "reason why" (or why not) question: Why did you attend XYZ College? Why have you never attended XYZ College?

So difficult to establish multi-choice categories for . . . so easy to ask in an open-ended manner. Unfortunately, this format presumes that people can articulate their reasons for doing (or not doing) something in the absence of any structure or guidance - and the fact of the matter is that most people cannot. To the extent that you wish to inquire about motives , then, (and this is at best a tricky proposition), you will need to provide some structure for the respondent to use in replying.

All of which cautions are to suggest that

OPEN-ENDED QUESTIONS CAN BE EXCEEDINGLY HAZARDOUS AND SHOULD THEREFORE BE USED WITH GREAT CAUTION

Multiple-choice questions also have their hazards. To avoid problems here, you will need to be certain that:

- The choices are comprehensive
- The choices are mutually exclusive or the fact that they are not is made clear to both the surveyors and those being surveyed
- The choices are sufficiently limited to preclude the respondent's throwing up his or her hands in bewilderment or dispair

Making the choices *COMPREHENSIVE* means that all of the pertinent or important possibilities are included, such that only a very small percentage of respondents will not select one of the options offered. (And no fair using "other" as an escape hatch: it has all of the problems of an open-ended question and then some. If a sizeable number of people mention something you didn't offer everyone, you have to question how different the results would have been if you had.)

Making the choices *MUTUALLY EXCLUSIVE* means ensuring any given respondent will fall into one and only one category. The exception to this rule is if you recognize that several categories might apply to a particular respondent and you are prepared to accept multiple responses. Beware, however, that such responses are more difficult to interpret.

The classic example of a case in which categories should be mutually exclusive but are not is the subject of a respondent's age. Many of you have undoubtedly seen:

1. What is your Age? (PLEASE CHECK ONE)

Under 21	☐
Between 21 and 30	☐
Between 30 and 40	☐
Between 40 and 50	☐
Between 50 and 60	☐
Over 60	☐

What do you check if you're forty? Or if you just had your 60th birthday?

Less readily detected before a survey is implemented, but usually all too easily noted as the results come in (that is, you're getting multiple responses when you didn't want them) is the embedding of one option in another. Consider the following, drafted by a Project participant in an effort to combine two questions from other districts' assessments:

2. Would you be attending XYZ College . . . (PLEASE CHECK ONE):

a. to prepare for work ☐
b. to move up at work ☐
c. to get a degree or certificate ☐
d. for personal improvement or enrichment ☐
e. for some other reason (explain) ☐

_____

Although vocational educators can make a distinction between (a) and (b), at least intuitively (because we *assume* the person who designed the questionnaire intended us to make one), the average person either would perceive (b) as being a subset of (a) and select both, or being responsive to the request to select only one, would be thoroughly confused.

In sum: in order to prevent inaccurate responses, multiple responses to supposedly single-response questions, and confusion on the part of respondents (which not only will ruin your response rate but is generally bad public relations), it is important to double- and triple-check multiple-choice response options to be sure that any given individual can clearly see which one, single category is applicable. (Unless, of course, multiple responses are explicitly permitted.)

Finally, you need to make an effort to make your multiple choices *REASONABLY SUCCINCT*. A long list of options, whether read, heard, over the telephone or listened to in one's living room, is tedious and bewildering. People tend to forget the first item by the time they get to the last one. In any event, the mind is generally incapable of making thoughtful selections from among more than a handful of options. If you have more than ten options (and in most cases seven or eight), you probably have too many. Try condensing them, and if you can't, consider the possibility that what you want to know may not be suited to a multiple-choice question.

The development of *dichotomous questions* is perhaps the simplest design task in constructing a survey. The response options are limited by definition, and the concept of a dichotomy dictates their nature. The primary caution is that you need to be sure you are asking about a dichotomy.

A large percentage of questions of fact (although by no means all) can be posed as simple dichotomies. For example:

- Have you ever attended XYZ College?
- Are you currently enrolled in a class at a community college?
- Did you receive any vocational or career counseling at XYZ College?
- Have you ever taken part in any activity other than a class at XYZ College?
- Are you employed?
- Are you employed full-time or part-time?

It is less frequently possible to pose questions of opinion or motives as dichotomies. With respect to opinions, there are so many shades of grey that a dichotomy would lose significant aspects of the response. For example, the question

- Do you think XYZ College is doing a good job of serving the needs and desires of people in your community or not?

forces the respondent into a virtually impossible situation. What if he or she is on the fence - around "fair," for instance? "Yes" is too positive a response, but "no" is too negative. Questions such as this deserve a scale of some sort to accommodate the range of human perceptions.

Certain opinion questions, however, are well-suited to dichotomous presentation. If, for example, you were contemplating the development of a child care center, you might ask potential students:

- Do you believe you will need facilities for child care when you attend XYZ College?

Or, if parking lot safety due to lighting were a concern, you might ask:

- Do you believe the parking lots at XYZ College are lighted well enough for people to be safe on campus in the evening?

The formulation of these questions as dichotomies might actually give you stronger planning data than would scaled questions on the same subjects.

Finally, there are questions about motives. In general, it is safe to say that motives are rarely dichotomous. That is, there are almost always more than two reasons why people might do or have done something. (The reader will recall the attempt to make a dichotomy out of reasons for attending mythical XYZ College and its obvious omission of several significant options.) Consequently, unless you are absolutely certain that you have covered all possibilities, motives should be inquired about in another manner. The risk you run otherwise is forcing the respondent to make a choice between two "not applicable" reasons.

Summary

In sum, there are four basic types of question content and three fundamental question structures. These are:

CONTENT	*STRUCTURE*
- *Questions of Current Fact*	- *Open-ended Questions*
- *Questions About the Past and the Future*	- *Multiple-Choice Questions*
- *Questions on Opinions*	- *Dichotomous Questions*
- *Questions About Motives*	

Designing any type of question has its perils and potential pitfalls. These can be outlined as follows:

OPEN-ENDED QUESTIONS

- *To be avoided if possible*
  - *difficult to obtain comprehensive and specific yet succinct responses*
  - *difficult and costly to interpret*
- *Not suitable for questions about motivations*
- *Appropriately used in pilot studies*
- *May be appropriate with lengthy lists of concrete options*

MULTIPLE-CHOICE QUESTIONS

- *Choices must be comprehensive*

  - avoid unnecessary or expensive use of "other"

- *Choices should be mutually exclusive unless multiple responses are appropriate*

- *Number of options should be limited to ten or fewer*

DICHOTOMOUS QUESTIONS

- *Important that subject actually be dichotomous*
- *Particularly appropriate for questions of fact*
- *Infrequently appropriate for opinion questions*
- *Rarely appropriate for questions of motives*

STEP 5: HOW DO WE ORGANIZE OUR QUESTIONS?

Whether you conduct your assessment by mail, over the telephone or in person, you will need some structure and order in which to ask your questions. This structure, which is typically printed on paper (although some professional firms now program it and use CRT terminals to enter the responses) is variously called a *QUESTIONNAIRE*, a *SURVEY INSTRUMENT* or, in an interviewing situation, an *INTERVIEW PROTOCOL*. Because the term questionnaire is usually associated with mailed assessments while a protocol applies only to interviews, the term survey instrument will be used in this discussion.

The manner in which you structure and order your survey instrument will be crucial to the success or failure of your assessment. For although educators have considerable experience and patience (sometimes out of necessity) with poorly designed and constructed surveys, the general public is far less accommodating. An unclear, illogical or sloppy instrument will have a substantial - and adverse - effect on your rate of response.

Not only the response rate, but also the responses themselves can be affected by a survey's structure. First, the ordering of questions can influence the manner in which they are interpreted and answered; biases can even be introduced in this manner. Second, if questions are illogically sequenced (either intellectually or psychologically) there

will be a tendency for respondents either not to answer them or to answer inaccurately. In short: a survey instrument needs to *MAKE SENSE* and it needs to *FLOW*.

Before we proceed into the complexities of sense and flow, however, the reader should take heart and heed the following comment of an expert in the field:

> Questionnaire construction is an art, not a science. If twenty different research experts were given an outline of subject matter, and each asked to construct a questionnaire, there would be twenty different, unique questionnaires. Each one might be good, or even bad.[25]

In short: there is nothing magic about the design of survey instruments. Common sense, a logical, detail-conscious mind, an understanding of human nature, and practice will probably stand you in better stead in this regard than an infinite number of rules or guidelines. What follows, then, is some general guidance along with a fairly brief set of common-sense rules.

Typically, survey instruments have three parts: the introduction (which may be represented by the cover letter in the case of a mail survey), including the respondent selection procedure; the assessment

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[25] Blankenship, p. 92.

content; and information about the respondent. Each of these components is discussed in detail in the sections which follow. Examples of telephone survey instruments tested as part of the Project which follow the guidelines outlined in these sections can be found in the Technical Supplement, as can two untested mail survey designs and cover letters.

Introduction

The ideal introduction, whether verbal or written, is brief, informative and to the point. It tells the respondent:

- Who wants the information
- The general nature of the information desired
- Who is to provide the information
- In some cases, the amount of time required to provide the information

All of this can - and should - be covered in two or three short sentences or written paragraphs, because the only objectives of the introduction are to:

- Persuade the respondent to cooperate
- Establish sufficient rapport to proceed with the interview or to ensure a thoughtful mail return

Research indicates that the content of the cover letter for a mailed survey has a significant impact on rates of return. Specifically, pointing out non-commercial sponsorship, promising anonymity and enclosing a monetary incentive appear to increase response rates, (Kanuck and Berenson 1971). However, none of these tactics appear particularly promising over the telephone (Dillman, Gellegos and Frey 1976), and there is some evidence that telephone respondents don't even grasp the topic before they decide whether or not to cooperate.

In attempting to obtain cooperation over the telephone, Project participants found that the following tactics were particularly successful:

- The identification with a public educational institution
- Use of the phrase "taking a poll"
- The sound of sincerity on the part of the interviewer

Presumably, these same tactics would also be effective in a door-to-door survey. Districts which contract out their assessments may also be purchasing identification with a recognized firm, which in and of itself may increase the willingness to participate.

Immediately following the introduction, there is a need to identify the particular individual who is to provide the responses. This is somewhat difficult to accomplish by mail, because there is no guarantee that the person being asked to respond will in fact do so. With respect to telephone and door-to-door surveys, however, more control can be exercised.

If you do not actively select respondents within households, your sample will be far from representative. Specifically, you will wind up with a preponderance of middle-aged housewives. This is because:

- Women tend to be home more than men
- Women tend to answer the phone more often then men
- A child, if asked for any adult, will more frequently give the phone to mother rather than to father
- As a population group, young men are least frequently at home

There are a variety of tactics which can be used to ensure a representative sample.[26] Perhaps the simplest, which was used by Project participants, is to end the introduction with the following:

> I would like to interview the youngest male adult 18 or over who is at home now.

If there is no male adult at home or a male adult is not available, the interviewer is instructed to continue with:

> Then I would like to interview the youngest female adult who is at home now.[27]

There is no sexist intent in this approach; it merely gives men - and particularly younger men - a fighting chance to be included. Moreover, the technique works. The sample for the statewide survey was within two percentage points of the true population distribution of males and females, and most Project participants approached or even exceed this degree of representativeness.

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[26] Two of the more complex techniques, which involve the use of specially constructed tables, are described in Trohldahl and Carter (1974) and Bryant (1975). An overview of the advantages and disadvantages of various techniques can be found in Blankenship, pp. 79-80.

[27] Cuesta College had an unusual experience when they utilized this approach: neither was reportedly at home. At first they assumed that they were not emphasizing "or older" sufficiently, because the respondents appeared to be older adults. When they stressed that any adult was eligible, however, they were told again (clearly by adults) that no such person was at home. What they realized they were getting were politely couched refusals from adults who were not interested.

The Ventura District, for example, came within 1.3%, and Columbia College was off by only 0.1%.

The Assessment Content

Having come up with an eligible adult, whether that be a he or a she, you are now ready to start asking the real questions. But where to start? The objective in structuring an assessment's content is to *START* with *HIGH-INTEREST*, *SIMPLE* and *NON-THREATENING* questions, leaving dull, complex, or sensitive questions until you have the respondent thoroughly involved. This applies to all types of surveys, but it is particularly critical over the telephone, which is so frightfully easy to hang up.[28] Establishing rapport before anything potentially alienating is asked is essential.

Within the above limitations, the first two considerations in structuring an instrument are *LOGIC* and *FLOW*. Questions should be arranged such that they:

- Precede from the general to the specific
- Complete one topic before moving to the next
- Establish natural, smooth transitions between topics

[28] If a survey is well designed, abrupt terminations in mid-interview are rare. Typically, only one to two percent of those who consent to be interviewed will not finish. Anything over 5% and you're probably doing something wrong.

- Do not "come out of left field"

And, in the case of telephone or personal interviews:

- Are conversational rather than stilted or abrupt

A final consideration is the way in which the placement of one question may influence the responses to another. Unfortunately, considerations of this nature may jeopardize the flow, and vice versa. Two examples from the Project are illustrative.

The first concerns two evaluation questions. One asked, "Overall, how would you evaluate the job _____ College has done in serving the needs and desires of people in your community?" The second listed seven missions or functions of community colleges and asked respondents first how important they thought each one was and then how good a job they believed the local community college was doing in that area. Logic would place these two questions one after the other - but which one should come first?

It might appear that this is a ridiculous question. In point of fact, however, the "overall evaluation" question is really two questions, depending on where it is placed.

An overall evaluation asked for prior to the missions/functions question will generate an unfocused, off-the-top-of-the-head judgment about the totality of the institution, perhaps including but certainly not limited to its missions and functions. (And quite possibly focusing on the layout of the campus, Cousin Jane's courses there, or the media accounts of last night's Board meeting.) Asked after several minutes devoted to evaluating missions and functions, on the other hand, it will serve primarily as a summary of those evaluations, to the probable exclusion of all other aspects of the college. So it's back to the objectives and that old, familiar question: what is it that you really want to find out?

This particular situation had no adverse impact on instrument flow - it was merely a question of particular information needs. A second "problem question," however, posed more serious concerns.

Several participating districts decided to ask a series of questions about possible barriers to attendance among those who had not attended in the past and who were not planning to attend. Logic would suggest the following flow:

ATTENDED? . . . NO
↓
PLANNING TO ATTEND? . . . NO
↓
WHY NOT?

The logic of the remaining questions suggested that the evaluation items should come next. Yet the "why not" question appeared to have a markedly negative power of suggestion. (Sample reasons are: the _____ College campus is not conveniently located for me; it is very difficult to find a convenient parking place at _____ College; _____ College doesn't offer what I want or need.) It seemed that the evaluations of non-attenders would almost certainly be biased.

Two professionals in the field discussed the issue - and disagreed as to whether the question about barriers would actually cause bias.[29] Neither mind could be changed, so one district went one way and the other went the other, while a third put the question just before the respondent information. Here are the results:

> The district which requested an overall evaluation immediately prior to asking why some people had never attended and were not planning to attend (and after having asked for evaluations of various missions and functions) was rated excellent or good by 78.3% of respondents. The multi-campus district which asked about non-attendance just before the respondent information received 63.2% excellent or good ratings of the particular college with which respondents felt they were most familiar.

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[29] Had both agreed that the question would bias subsequent responses, there would have been no debate over its placement. The elimination of bias should always take precedence over flow.

And the district which placed the evaluation series (the missions/functions questions followed by the overall evaluation questions) immediately after the non-attendance queries was rated excellent or good by 75.0% of respondents. In sum: the ratings of all three districts were similar, and the evaluation of the district which placed the question about barriers first was not significantly poorer.

Needless to say, it is not possible to assert that the non-attendance question had no biasing effect on the basis of these data alone. The district which placed it first might have been rated excellent or good by 95% of respondents had the evaluation questions come first. One would need to have tested both formats in the same district in order to prove or disprove the hypothesis about bias. Inasmuch as the evaluations of all seven participating districts were in the same vicinity, however, it is probable that the non-attendance question is not as negative as it appears.

This particular outcome suggests that the potential for bias may sometimes be more apparent than real. In many cases, however, whether or not your results are biased will depend on how you organize your questions. Issues of placement and flow should therefore be given most careful attention in designing an instrument. The decisions you make may well influence the very nature of your results.

The Respondent Information

Having obtained the perceptions, opinions and preferences you desire, you will probably want to find out something about the person who gave you the answers. This, then, is the time to ask those embarrassing questions about age, ethnicity, income and the like.

Most people would frankly rather not give out personal information about themselves, and it is wise to be sensitive to this fact in designing the respondent section of your instrument. To wit:

- Keep the amount of information requested to a need-to-know minimum
- Be prepared for a fairly substantial percentage of refusals or non-responses to certain questions
- Use standard, tested and relatively non-threatening approaches to information on age, ethnicity or income

With respect to keeping the amount of information requested to a need-to-know minimum, perhaps the best approach is to decide what you are actually going to look at when the results are in. If, for example, you haven't the capability or the desire to run cross-tabulations, then there is no point in asking about household size as it relates to income in order to identify economically disadvantaged respondents.

Similarly, if you have no particular use for information about length of residence in the area (and really to use it would mean performing some fairly sophisticated analyses), then don't ask for it.

Beware, however, of being overly sensitive to respondents' privacy. One Project participant asked almost no "sensitive" questions (including ethnicity and income). The district subsequently conceded not only that it had insufficient data to determine the representativeness of the sample, but also that it had markedly overestimated respondents' sensitivities.

In general, questions about respondents themselves will elicit a greater percentage of refusals than any other type of query. In the statewide assessment, for example, 15.8% of respondents declined to answer all or part of the income question, which was by far the highest refusal rate in the entire survey. Refusals in other areas tend to be less prevalent than one might expect, however. Fewer than one percent of statewide survey respondents declined to state their age, and only two percent refused to give their employment status. Moreover, respondents who do refuse typically are neither angered nor alienated. They simply would prefer not to give out personal information.

The best way to minimize refusals in the respondent information section is to use standardized and tested questions rather than creating your own. These are questions which have been structured such that

they pose a minimal threat to the respondents and which have been demonstrated to be effective in this regard. Many have also been shown to maximize accuracy in reporting. The premier example of this type of question is the inquiry about income - undoubtedly the most sensitive of all.

In a 1976 study, William Locander and John Burton tested four approaches to asking about income and analyzed the results in terms both of refusal rates and of the extent to which responses paralled the actual incomes of the responding population. One form proved to be superior on both counts, and it is this form which was used in the statewide survey as well as in Project participants' assessments. This question along with similarly tested questions about age, ethnicity and other sensitive topics can be found in the survey instruments included in the Technical Supplement.

In sum, requests for personal information about respondents should be limited (but not eliminated), should display a sensitivity to respondents' hesitancy in this regard and should utilize standardized formats which have been developed and tested by survey research specialists. If you adhere to these quidelines, you will minimize embarrassment (either to your respondents or to your interviewers or both), avoid undue suspicion, and decrease the number of respondents who abandon you when the survey is almost complete.

Instructions to the Interviewer or Reader

Once all of your questions are lined up in logical and natural order, flowing smoothly from start to finish, you need to communicate what the interviewer or reader is supposed to do with them. Specifically, you need to instruct an interviewer:

- Whether the response options for a particular question are to be read or not
- When, and under what circumstances, to skip certain questions
- Whether or not multiple responses to a multiple-choice question are acceptable
- To thank the respondent at the end of the interview

The reader will need to know:

- How to answer each question (e.g., PLEASE CHECK ONLY ONE; CHECK ALL THAT APPLY)
- When, and under what circumstances, a particular question need not be answered
- How and where to return the instrument
- That his or her cooperation is appreciated (via a "Thank You!" at the end)

All of this information should be included on the survey instrument itself, in order to minimize errors in the case of interviews or to prevent confusion on the part of a mail respondent.

There are two basic mechanisms for conveying this information: (1) by preceding every query with an instruction; or (2) by following every response option with an instruction.

It is conventional to put either type of instructions in CAPITAL LETTERS to make them stand out from the text and to differentiate them from the questions themselves. (This also prevents interviewers from reading their instructions aloud, which can sound exceedingly odd.)

The first approach, preceding the questions with instructions, might look something like this:

1. Have you ever attended any classes at XYZ College?

   YES ☐ NO ☐

IF ATTENDED XYZ COLLEGE:

2. Did you receive any type of counseling when you attended?

   YES ☐ NO ☐

Instructions following response options might appear as follows:

1. Have you ever attended any classes at XYZ College?

YES ☐ (CONTINUE) NO ☐ (SKIP TO 3)

2. Did you receive any type of counseling when you attended?

YES ☐ (CONTINUE)
NO ☐

For safety's sake, some instruments include both types of instructions, as in the following example:

1. Have you ever attended any classes at XYZ College?

YES ☐ (CONTINUE) NO ☐ (SKIP TO 3)

IF YES:

2. Did you receive any type of counseling when you attended?

YES ☐ (CONTINUE)
NO ☐

In general, Project participants found instructions following the response options to be the least confusing and the most helpful to interviewers, although some believed both types to be necessary. Examples of the various approaches they took can be found in their instruments, which are included in the Technical Supplement.

An Example

Figure III-4 on pages 115 and 116 shows a hypothetical draft needs assessment survey instrument prepared by a community college to measure residents' awareness of and attitudes toward the institution. For simplicity's sake, let us assume that the college has only three objectives in conducting its assessment:

- To determine what proportion of residents are aware of the college
- To determine what proportion of residents are actually enrolled in the college
- To determine how residents evaluate four of the community college's functions as well as its overall service to the community

In addition, let us assume that the college has decided to conduct its assessment by telephone. Finally, we will assume that the college has determined that it needs the following personal information from respondents: age, sex, ethnicity and educational attainment.

Before reading on, you might want to study this draft and see if you can detect all of the problems it contains.

FIGURE III-4

NEEDS ASSESSMENT SURVEY DRAFT

Hello, I'm _____. We're conducting a survey, and I'd like to ask you a few questions.

1. How old are you? UNDER 21 ☐ 21 - 30 ☐
   31 - 40 ☐ 41 - 50 ☐
   51 - 60 ☐ OVER 60 ☐

2. Have you ever heard of XYZ Community College?

   YES ☐ NO ☐

3. What do you think about the job XYZ College is doing here in (City)? Do you think it's doing an EXCELLENT ☐, GOOD ☐, FAIR ☐, OR POOR ☐ JOB?

4. IF YES: HOW DID YOU FIRST HEAR ABOUT XYZ COLLEGE?

   _____

   _____

5. We do lots of different things here at XYZ College. Tell me whether we're doing a good or poor job in:

	GOOD	POOR
Vocational/Occupational Education	☐	☐
Transfer Programs	☐	☐
Classes so People Can Have Fun	☐	☐
Teaching the 3 R's	☐	☐

6. Have you ever heard of any other community colleges?

YES ☐ NO ☐

7. Are you currently enrolled in any classes at XYZ College?

YES ☐ NO ☐

8. Do you take classes at XYZ College because it is convenient or because the quality of instruction is good?

CONVENIENCE ☐ QUALITY OF INSTRUCTION ☐

9. What is your race? _____

10. How far did you get in school? _____

11. What is your sex? MALE ☐ FEMALE ☐

Clearly, Figure III-4 represents an extreme example of how *NOT* to design a survey instrument. Were you able to detect all of the flaws?

Abbreviated as it is, the *INTRODUCTION* would undoubtedly lead to a high incidence of refusals. Neither the sponsor nor the purpose of the survey is identified, and potential respondents would have every reason to be suspicious. At best, numerous questions and the need for time-wasting answers would ensue along with a possible permanent loss of rapport. Finally, no procedure to select the particular respondent within a given household is included.

The placement of *QUESTION 1* is totally inappropriate. If personal questions are to be asked, they should be asked at the end rather than at the beginning of the interview. Furthermore, the question's wording is quite abrupt; a significant number of respondents would probably refuse to answer it as a result.

On the surface, *QUESTION 2* is a legitimate and appropriately placed query. However, because it "gives away" the topic of the assessment by its content, it is a somewhat less than reliable measure of residents' true awareness. In addition, its phrasing is such that it gives the respondent no face-saving "out" in the event he or she has not heard of the college.

QUESTION 3 is ambiguous. What is meant by the word "job"? What is the reference point? Job of doing what? Anyone attempting to analyze the responses to this question would be hard pressed to say what they really meant.

QUESTION 4 has several problems associated with it. In the first place, it is out of sequence; if it is to be asked at all, it should be asked immediately following Question 2. Secondly, it places an undue strain on the respondent's memory of the past; few people can recall when or how they first heard of any institution or organization, let alone one which is more or less constantly in the public eye. Finally, it is totally open-ended, with no suggested framework for the response. In combination, these problems would almost certainly guarantee meaningless results.[30] (Note also that this question exceeds the scope of the stated assessment objectives.)

Although it is important that interviews be conversational, *QUESTION 5* is overly informal and colloquial. Moreover, it borders on being rude in its use of the command "tell me." There are several other problems

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[30]Depending on the phrasing, the various forms of this question typically have one of two predictable results: either "word-of-mouth" or "the newspaper." The former probably approximates the truth most closely, although human recall of events in the distant past being what it is, one cannot be sure. The "newspaper" response has been shown to apply even to households which receive no newspapers, and probably represents an attempt to impress presumably educated surveyors with the respondent's "high class" behavior. In general, this question (as well as the parallel "How do you usually hear about events at the college?") is probably worthless in terms of planning public information strategies.

with this question as well. The response options it offers are too limited for an opinion or evaluation question and present the respondent with the unpleasant choice of either praising or censuring the college. (At the very least, some neutral option ought to be offered.) Both the term "vocational/occupational education" and the phrase "transfer programs" are educational jargon which would be meaningless to the average respondent. Finally, the loaded terms "have fun" and "3R's" would undoubtedly skew the response in favor of those two activities.

There is nothing intrinsically wrong with *QUESTION 6* except that the answers probably won't tell you much. Its only value would be in identifying the particular colleges of which the respondent was aware in the event he or she were not aware of XYZ College. In addition, this question also goes beyond the stated scope of the assesment.

QUESTION 7 is an appropriate question, but its placement is poor. It forces the respondent to shift gears from facts (Question 2) to evaluations (Questions 3 and 5) and then back to facts again.

QUESTION 8 is leading and barely scratches the surface of the possible reasons for attending. By posing a nonexistent dichotomy, it forces the respondent to tell the college either that it is conveniently located or that its instructional quality is good. Nice to hear - but quite possibly inaccurate on both counts. (This is also a question which exceeds the assessment's objectives.)

Aside from their open-endedness, *QUESTIONS 9 AND 10* are phrased such that they are immediately threatening to the respondent. Both are abrupt, and the first one appears with no warning about the shift from content to personal information. Use of the word "race" without qualification or deliberation will probably lead not only to refusals or arguments, but also a variety of inappropriate responses such as "American" or "a little bit of French, German and Italian." Finally, the phrase "how far did you get ..." implies that the respondent ought to have achieved a certain (albeit unspecified) level of education.

In interview surveys, *QUESTION 11* is better left unasked, for reasons which probably need not be detailed. (It is a simple and relatively inoffensive question to ask on a mail survey.) In personal interview situations, the answer should be obvious to even the untrained observer; over the telephone, it can almost always be discerned by the end of the interview.

IN GENERAL: This instrument contains no instructions to the interviewer as to what should be read, what is not to be read and what questions should be skipped under which circumstances. Unnecessary additional training would be required to convey this information, and the probability of interviewer error would be substantially increased. (Such instructions are even more important in mail surveys.) Also, there is no instruction to the interviewer to thank the respondent - an exceedingly important part of any assessment in terms of the image of the college.

Figure III-5 on pages 121 and 122 depicts a revised version of XYZ College's needs assessment. Note how the problems in the draft have been resolved, yielding both a more pleasant and a more reliable request for information.

FIGURE III-5

NEEDS ASSESSMENT SURVEY

Hello, I'm _____ from one of the local public educational institutions. We are taking a poll to measure public opinion about some issues of importance in the _____ area in California.

I would like to interview the youngest male adult 18 or over who is at home now.

IF NO MALE ADULT OR MALE ADULT NOT AVAILABLE, SAY:
Then I would like to interview the youngest female adult 18 or over who is at home now.

WHEN YOU HAVE ELIGIBLE ADULT, CONTINUE INTERVIEW.

As you may know, here in California we have local community colleges. These are two-year colleges, sometimes called junior colleges. I would like to ask you a few questions about these colleges and get your impressions of them.

1. First, do you happen to know the name of the community college in your area?

   XYZ COLLEGE ☐ (SKIP TO 3)

   OTHER ☐ (CONTINUE)

2. IF OTHER: Well, as it happens, the community college in your area is XYZ College. Before I called, had you ever heard of this college?

   YES ☐ (CONTINUE) NO ☐ (SKIP TO 4)

3. Are you currently enrolled in any classes at XYZ College?

   YES ☐ NO ☐

4. In general, how would you evaluate the job that XYZ College has done in serving the needs and desires of people in your community? Would you say it's done an ... READ CATEGORIES

   EXCELLENT JOB ☐
   GOOD JOB ☐
   FAIR JOB ☐
   POOR JOB ☐
   DO NOT READ → NO OPINION ☐

5. As you may know, XYZ College offers classes which serve a variety of purposes. I am going to read you four of these purposes. As I read each one, please tell me whether you feel XYZ College is doing an excellent, good, fair, or poor job in this area. START WITH STATEMENT CHECKED.* IF DO NOT KNOW ENOUGH TO RATE, RECORD "NO OPINION."

	EXCELLENT	GOOD	FAIR	POOR	NO OPINION
Classes which prepare people for work	☐	☐	☐	☐	☐
Classes which prepare people to transfer to four-year colleges or universities	☐	☐	☐	☐	☐
Classes which enable people to pursue hobbies or recreational interests	☐	☐	☐	☐	☐
Classes which teach people basic skills such as reading and writing	☐	☐	☐	☐	☐

* If respondents are asked to evaluate or prioritize a list of items, it is important to rotate the order in which the list is read. (In this example, every fourth interview would start with "... prepare people for work," the next one would start with "... prepare people to transfer ...," and so forth.) This is because responses concerning one item can affect the responses to subsequent items. Randomizing the order in which items are presented randomizes this biasing effect.

In order to be able to classify your responses along with others, I need to ask a few questions about you . . .

6. What is your age? (IF RESPONDENT HESITANT TO ANSWER, SAY: Well, could you just give me a general idea?) ☐

7. What was the last grade in school that you completed?

- 8TH GRADE OR LESS ☐
- 9 - 11TH GRADE ☐
- 12TH (HIGH SCHOOL COMPLETED ☐
- 1 - 2 YEARS BUSINESS OR TECHNICAL SCHOOL ☐
- 1 - 2 YEARS COLLEGE ☐
- 3 YEARS COLLEGE ☐
- COLLECE: ADVANCED DEGREE ☐
- REFUSED ☐

8. We would also like to know your racial or ethnic background . . . Are you Caucasian, Black, Oriental, American Indian or some other race?

CAUCASIAN/WHITE	☐	(CONTINUE)
BLACK	☐	
ORIENTAL	☐	(SKIP TO 9)
AMERICAL INDIAN	☐	
OTHER:	☐	(CONTINUE)
REFUSED	☐	(SKIP TO 9)

123

IF "CAUCASIAN/WHITE" OR SOME OTHER, ASK:

Do you happen to be of Mexican descent?

YES	(SKIP TO 9)
NO	(CONTINUE)
REFUSED	(SKIP TO 9)

IF NO, ASK:

Are you of other Hispanic or Spanish descent?

- YES
- NO
- REFUSED

9. RECORD SEX OF RESPONDENT: MALE ☐ FEMALE ☐

INTERVIEWER NAME: _____

DATE: _____

TIME: _____

Pretesting the Draft Instrument

As a general rule, no survey instrument should be used in a final study until it has been given an adequate "trial run." Not even the experts who design questionnaires on a virtually daily basis believe that they can draft a perfect instrument. As the vice-president of a major research firm notes:

> There are some people who feel they can sit at their desk and "write questionnaires." I have yet to meet any geniuses of this type who can really produce. Every questionnaire which I have seen which has not been pretested has had some serious flaw in it . . . [31]

There is one possible exception to this rule: if you adopt another district's design verbatim, it may not be necessary to conduct a pretest. Inasmuch as communities in California vary substantially, however, you may still want to make a few preliminary calls to be sure that what made sense somewhere else will make sense in your area as well. (Recall, for example, that words sometimes have different connotations in different parts of the state.)

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[31] Eugene Telser, Vice President, Custom Research Service, A.C. Nielsen Company, quoted in Blankenship, p. 104.

As you set off to plan and conduct a pretest, there are three basic issues you will need to consider:

- What it is you need to look for
- How many calls you should make
- Who will do the actual calling

The primary purpose of a pretest is to ensure that the final version of the instrument *works*. Basically, what we mean by this is that the instrument is *understood* by all concerned and that it *obtains desired information*. Some of the things you will want to look for in this regard are the following:

- Does the introduction elicit cooperation from a sufficient number of potential respondents? (If more than 20 - 25% of those who are contacted refuse to be interviewed, the introduction may be at fault.)
- Do the questions appear to be clear to respondents, or are there selected queries which respondents consistently request clarification on?
- Are the kinds of answers respondents give responsive to the questions, or are they somehow inappropriate?

- Are open-ended questions generating logical responses? Are multiple-choice questions generating a minimal number of "other" responses? Are dichotomous questions being answered, or are there so many "no responses" that the subject may not really be dichotomous?
- Does the structuring appear to be logical, or do respondents appear to be confused or uneasy at certain points?
- Can interviewers follow the instructions, and do so with ease? Is the sequencing correct, such that various types of respondents are asked the appropriate questions?
- Do the pretest interviews flow and appear to be pleasant or at least neutral experiences for respondents and interviewers alike, or are there points at which the interview poses some kind of threat?
- How long does the average interview take? Does the instrument appear to be too long either to the interviewers or to a substantial number of respondents?

- Are there a sizeable number of respondents who fail to complete the interview? ("Sizeable" in this instance generally means anything over 2 - 3%.) At what point does this typically occur, and why?

The answers to these questions should point to any problem areas in your instrument and give you the information necessary to come up with a truly workable final version. But how many people do you have to interview in order to obtain all this enlightenment?

There is no hard and fast rule about the number of people who need to be interviewed in order to have a viable pretest: "standard practice" ranges from less than ten to over 50. In general, however, 15 - 20 interviews should be sufficient if you have adopted someone else's already-tested instrument (such as one of those included in the Technical Supplement) or if you use an untested instrument designed by someone with professional expertise in the area. Only if your design is completely new and exceedingly complex should it be necessary to exceed 20 pretest interviews in order to be reasonably certain that the instrument works. And if you merely wish to double-check the applicability of someone else's instrument to your particular area, ten or fewer interviews should suffice.

Finally, there is the question of who should do the calling. Opinions differ in this regard, but there is some agreement that the person who designed the instrument ought to place at least a few of the calls. This contention follows from the assumption that it is somewhat easier to admit the necessity to change one's work on the basis of one's own experience than on the basis of someone else's. Pride of authorship being what it is, however, it is probable that someone else ought to be involved as well. To the extent that sequencing and timing are of concern, an "average" interviewer may be the best choice. Some professional firms use superior, "average" and totally inexperienced interviewers during a pretest in order to generate a variety of perceptions of the instrument and the way it works.

Summary

Any needs assessment instrument will have three basic components:

- The Introduction
- The Assessment Content
- The Respondent Information

In constructing a survey instrument from a collection of more or less disjointed questions, it is particularly important to bear two general principles in mind:

THE INSTRUMENT SHOULD MAKE SENSE, AND IT SHOULD FLOW

Beyond this, the *Introduction* should:

- Be brief, informative and to the point
- Have as its sole objectives enlisting cooperation and establishing rapport
- Include a mechanism for selecting the particular respondent within a given household

The *Assessment Content* should:

- Start with high interest, simple and non-threatening questions
- Proceed from the general to the specific
- Complete one topic before moving to the next
- Establish natural, smooth transitions between topics
- For interviews, be conversational in nature rather than stilted or abrupt
- Avoid biasing responses by question placement

The *Respondent Information* should:

- Be kept to a need-to-know minimum
- Use standardized, tested and relatively non-threatening approaches

All of this should be tied together with *Instructions* to the interviewer or reader so that the logic and flow of the instrument is clear. The final draft of the instrument should then be *Pretested* in order to ensure that its ultimate version will be understood by all concerned and that it will in fact obtain the desired information.

STEP 6: WHOM DO WE ASK?

Introduction: Sampling Theory and Samples

Clearly, conducting a survey of the entire community is only feasible in the smallest of areas - a town of a few hundred residents, for example. Happily, it is not necessary to do so in order to obtain results which *REPRESENT* the entire community. (The statistical wizards inform us that only communities of less than 15 residents need to be surveyed in their entirety.)

The question then becomes: how many people *DO* you need to survey, and who should they be? The answer to this question is based on the theory and practice of *SAMPLING* - that is, literally, selecting and viewing a sample of the community as being representative of the whole.

As Morris Slonim notes in his delightful treatise on the topic, Sampling, mathematicians, statisticians and researchers have obfuscated the subject of sampling to the point of terminal frustration among lay people. Technical terms and complex formulas abound, and it is easy even for the relative novice to bog down almost immediately in such complexities as "multi-stage stratified cluster sampling" or the "estimated sampling error for a binomial."

However, as Slonim so aptly points out:

> Everyone who has poured a highball into the nearest potted plant after taking one sip has had some experience in sampling. The abstemious reader doubtless has at one time or other pushed aside a bowl of tepid mush after swallowing a spoonful. He, too, has unwittingly employed a sampling technique. It is not necessary, one perceives, to have a graduate degree in mathematics to be reasonably proficient in sampling matters, in a practical sort of way.[32]

Fortunately for the non-mathmetically-minded reader, the author is of the same general opinion as Mr. Slonim. What you *DO* need to know about sampling in order to conduct a valid needs assessment survey is actually relatively simple and can be described without resorting either to esoteric jargon or to complex formulations.

To begin with, three general considerations. First:

- The confidence you have in your results will be directly related to the size of your sample.

HOWEVER

- In sampling, more is not necessarily better.

[32] Slonim (1960), p. 1.

People tend to think that more interviews or mailings means more representative results. This is simply not the case. If X interviews are sufficient under the laws of statistics, then X + 1 or even X + 100 will not be anything other than more than sufficient. More may, in fact, be worse. More cost will be incurred, more time will be taken (with the corresponding risk of changes which might affect responses), and more staff will be needed (with the corresponding risk of additional biases and/or the use of less than fully-qualified personnel).

Secondly:

- The confidence you can have in your results as well as the ways in which you will be able legitimately to analyze them will be directly related to the manner in which you select your sample.

Sampling theory is based on probability theory, which as anyone who has ever rolled dice, played cards, or even flipped a coin might suspect, has to do with the odds or chances of a particular event occurring.[33] When we flip a coin, for example, we know that we have a 50-50 chance that it will come up heads. Moreover, this chance will remain constant for every successive flip (to the dispair of those who live by hunches or patterns). We can therefore predict that if we flip said coin 100 times, the result will be heads 50 times and tails the other 50.

[33] It is perhaps illuminating in this regard that probability theory originated with a French libertine who wanted to find out what the odds were on a variety of his favorite gambling games.

This type of prediction only works, however, if we know what all the possibilities are (in this case just two - heads or tails) and we give each possibility an equal chance of occurring (that is, we flip the coin vigorously rather than tossing it carefully to get the heads we just bet on).[34] In short, we need to ensure that the outcome occurs at *RANDOM* rather than by intentional or unintentional design. All the predictions which sampling permits us to make and all of the methods of making them (i.e., the various statistical calculations which can be used) make this underlying assumption.

Third:

- The confidence you can have in your results and the extent to which you can legitimately subject them to statistical manipulation will be directly related to the manner in which you implement your sample.

In addition to the assumption of random selection, statistical procedures make the assumption that 100% of whatever sample was selected was in fact implemented (i.e., contacted and surveyed). It is therefore just as important that you survey all (or, to be practical about it, as many as humanly possible) of your initial sample as it is that the sample be of sufficient, randomly selected size.

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[34] There is actually another way in which this type of prediction will work: If we know what any other-than-equal probability of a given occurrence is. However, this is as difficult to determine in most research situations as it is to assess just how carefully the coin was tossed.

This, then, is another reason why more interviews or more mailings are not necessarily better. You will actually be in a better position to have contacted and obtained responses from 90% of a minimum sample than to have surveyed 60% of some larger sample, even if the 60% represents a larger absolute number of responses.[35]

Even the uninitiated would suspect (and correctly so) that if we set out to flip a coin 100 times, we might not achieve a tidy 50-50 split between heads and tails. This is because we would be but one sample of 100 coin-flips. However, if we lined up ten students and set them to flipping coins 100 times each, the chances are good (to be nonstatistical about it) that the *AVERAGE* of their combined efforts would be extremely close to 50-50. It is this average of the results of multiple samples which is the foundation for all statistical calculations.

The population of coin-flips is infinite - our students could go on flipping coins forever (at least in theory) and never exhaust it. Most populations from which samples are drawn, however, are finite - at least in the social sciences. It is therefore at least theoretically possible to determine all the possible combinations of samples of various sizes which could be drawn from that population. Using this information, statisticians can predict just how much the results from any given sample are likely to deviate from the results we would get if we

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[35] In addition to violating the mathematics which underlie statistics, low implementation rates can introduce serious biases into survey results. Those who are more difficult to reach differ in several respects from those who are readily contacted (Blankenship; Holmes and Glenn, Weaver), and non-respondents have been shown actually to have different perceptions than respondents (Blankenship; Donald; Erdos; O'Neil).

assessed the entire population (assuming random selection and assuming we used identical approaches to assessing the sample and the population). This deviation is referred to as the *SAMPLING ERROR*.

What this means is that we take a certain risk of being imprecise when we measure a sample rather than the entire population.[36] Typically, this imprecision is expressed by referring to whatever measure we derive from a sample as the *SAMPLE ESTIMATE* of the population value.

There are two components of this risk: *TOLERANCE* and *CONFIDENCE*. Tolerance refers to the degree of divergence we are willing to tolerate. We can specify, for example, that we want our results to be within 5% of the values we would get if we measured the entire population. Having made this tolerance specification, however, we have to concede that we might draw a peculiar sample and wind up with results that are more than 5% off. The extent to which we are willing to take that risk is called a confidence specification. We can express this in terms of betting odds that the chances are 99 to 1 or 95 to 5 (or whatever we decide upon) that our sample is off by no more than 5%.

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[36] It is common practice to refer to a sample as being more or less precise rather than more or less accurate. The term *ACCURACY* refers to a "true" figure - which we might or might not get if we measured the entire population, errors of measurement being what they are. *PRECISION*, on the other hand, reflects the degree to which our sample approximates the results we would get if we measured the entire population in the same way - possible measurement errors included.

It is the assessment administrator who must set the tolerance and confidence specifications for the assessment results. In practice, most people (and all but one Project participant) set both at 5%, and the remaining discussion will use these figures. Those who wish a more precise estimate can find the corresponding numbers in most sets of statistical tables.[37]

Setting confidence and tolerance limits at 5% means you can be 95% confident that your results will be within 5 percentage points (plus or minus) of what the results would have been had you surveyed every resident: For example:

- 85% of your respondents can name your college.

THEREFORE:

- You are 95% confident that between 81% and 91% (inclusive) of all residents can name your college.[38]

This presumes, however, that your sample size is sufficient, that the sample itself was randomly selected and that it was fully implemented.

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[37] Perhaps the best source is the Chemical Rubber Publishing Company's Standard Mathematical Tables, commonly referred to as the C.R.C.

[38] Actually, the greater the dichotomy of the response, the smaller the tolerance. In a sample of 400, for example, a response of 50% "yes" and 50% "no" is subject to a tolerance of $\pm$ 5%. A response of 90% "yes" and 10% "no," on the other hand, has a tolerance of $\pm$ 3%. As it happens, this represents the "estimated sampling error for a binomial." A full table of these estimates for various sample sizes and response levels can be found in Babbie, p. 376.

What is a sufficient sample size? As a general rule, any college or district with a service area population in excess of 30,000 can consider 400 surveys as constituting a sufficient sample. This is a rounded number, however, which is designed to be a convenient goal and to allow for some slippage due to unusable surveys. The actual numbers are displayed in Table III-1 below.

TABLE III - 1

POPULATION AND SAMPLE SIZES*

(95% Confidence; ± 5% Tolerance)

POPULATION	SAMPLE SIZE
10,000	370
15,000	375
20,000	377
30,000	379
40,000	380
50,000	381
75,000	382
100,000	383
500,000 to ∞	384

*Appropriate sample sizes are also dependent on the rate at which the characteristic(s) under examination occur in the population. The figures in this table assume the worst typical case in social research, which is a 50% rate of occurrence. (An example would be the respondent's sex.) Lower rates of occurrence - e.g., those who are attending a particular college (roughly 8% in most cases) - would allow smaller sample sizes. Inasmuch as the sample should be designed for the worst probable response, however, the figures in this table are the appropriate ones to use.

The astute reader will note that the relationship between population size and sample size represents an exceedingly flat curve. That is, the population can grow by leaps and bounds while the sample size increases by relatively minute increments. This is the primary reason why "more" is frequently an exercise in wasted resources rather than a guarantee of a more representative set of results.

Another way of viewing this phenomenon is to look at the increase in precision which accompanies an increase in sample size for a given population. Table III-2 below shows the tolerance specifications for various sample sizes for a population of 500,000 to ∞ at the 95% level of confidence.

TABLE III - 2*

TOLERANCE SPECIFICATIONS FOR VARIOUS SAMPLE SIZES
(Population ± 500,000; 95% Confidence)

SAMPLE SIZE	TOLERANCE
96	± 10%
119	± 9%
150	± 8%
196	± 7%
267	± 6%
384	± 5%
600	± 4%
1,067	± 3%
2,401	± 2%
9,604	± 1%

* Table adapted from the SAM Operations Manual (September 1978), p. 87.

As this table indicates, very little precision is gained from an increase in the sample size of as much as several hundred. Increasing the precision from ± 5% to ± 3%, for example, would mean almost tripling the sample size. For most purposes, the time and effort involved in surveying such a substantially larger sample would not be worth the relatively small gain in the precision of the results.

That having been said, however, there is a definite - and important - exception to this rule. This concerns what is referred to as *SUBGROUP ANALYSIS*.

The figures listed in Tables III - 1 and III - 2 are the sample sizes necessary and sufficient to draw conclusions about the population as a whole. In most instances, however, they will not permit conclusions to be drawn about population subgroups. Thus although we can be relatively definite about what all residents think, we would be on considerably more shaky ground if we attempted to compare the perceptions of men and women as distinct subgroups.

As a general rule of thumb, comparisons among subgroups should not be undertaken unless there are at least 100 responses in each subgroup.[39]

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[39] Limiting subgroup analysis to groups of 100 or more gives a tolerance of roughly 10 percentage points at the 95% confidence level. Some researchers prefer to use a figure of 200, which gives a tolerance of around ± 7%, but this level of precision is usually not necessary given the kinds of objectives a needs assessment can reasonably address. Differences in responses of less than ± 10% will probably be of insufficient practical importance in most instances to warrant being acted upon.

The need for 100 responses poses no particular problem with respect to comparisons between men and women inasmuch as each group represents roughly half of the population. But suppose one of your objectives is to determine the relative needs of various ethnic groups in your service area. Consider the hypothetical example in Table III - 3 below.

TABLE III - 3

ETHNICITY - ALL GROUPS

Ethnic Group	Percentage of Population*	Number of Responses
White (Non-Hispanic)	74.8%	299
Mexican - American	10.1	40
Other Hispanic	3.0	12
Black	6.2	25
Asian	2.1	8
Native American	1.4	6
Other	2.4	10
	100.0%	400

* The actual figures used here and in subsequent examples are from the statewide survey and are not intended to be representative of any particular district's service area. The 1980 Census data will probably prove to be the most reliable source of comparable local data in the next five years.

Clearly, if you followed the "Rule of 100," you wouldn't be able to say anything about ethnic minorities. Not precisely what you had in mind, we're sure. Therefore: *BEFORE YOU DECIDE WHAT SIZE SAMPLE YOU NEED, YOU SHOULD DECIDE WHAT SUBGROUPS YOU ARE GOING TO WANT TO LOOK AT.* The problem with this is that you may find the number of responses you need to be prohibitive in terms of available resources. The example in Table III - 4 is illustrative.

TABLE III - 4

ETHNICITY - ALL GROUPS

Ethnic Group	Percentage of Population	Number of Responses
White (Non-Hispanic)	74.8%	5,341
Mexican - American	10.1	721
Other Hispanic	3.0	214
Black	6.2	443
Asian	2.1	150
Native American	1.4	100
Other	2.4	171
	100.0%	7,140

For purposes of illustration, the smallest ethnic groups are included in this example to show the total number of responses this approach implies. In practice, most researchers would probably concede that these groups could not be included in any subgroup analyses and either eliminate them, focusing only on the largest groups in the community,

or consolidate them into an "other" category. The results of two alternative approaches in this vein are shown in Tables III - 5 and III - 6 below.

TABLE III - 5

ETHNICITY - THREE MAJOR GROUPS

Ethnic Group	Percentage of Population	Number of Responses Needed
White (Non-Hispanic)	74.8%	1,268
Mexican - American/Hispanic	13.1	222
Black	6.2	105
Other	5.9	100
	100.0%	1,695

TABLE III - 6

ETHNICITY - TWO MAJOR GROUPS

Ethnic Group	Percentage of Population	Number of Responses Needed
White (Non-Hispanic)	74.8%	618
Mexican - American/Hispanic	13.1	108
Other	12.1	100
	100.0%	826

Finally, consider one of the more evenly distributed characteristics of respondents, namely household income. We will reinforce this characteristic's tendency to be evenly distributed by establishing categories so as to minimize small percentages, as shown in Table III - 7.[40]

TABLE III - 7

HOUSEHOLD INCOME

Gross Annual Household Income	Percentage	Number of Responses Needed*
Under $10,000	20.5%	100
$10,000 - $24,999	36.2	177
$25,000 and Over	27.5	134
Not Reported	15.8	77
	100.0%	488

*This calculation presumes we cannot say much about "not reported" as a subgroup in any event and are therefore not concerned about its being adequately represented.

[40] In practice, this approach to categorization is a risky business. Responses should be grouped in equal intervals (e.g., by ten-year increments for age) or in categories which reflect established standards (e.g., lower, middle and upper income groups in this example, if there were standardized cut-off points).

The third formulation of ethnicity and the somewhat contrived approach to income level are probably manageable given a reasonable assessment budget. More detailed analyses, however, are clearly beyond the scope of any reasonable assessment. What to do?

Most people don't. They simply report their data by subgroup and ignore the fact that the sampling tolerances will not permit meaningful comparisons. Readers are then free to conclude what they will. There is nothing inherently wrong with this approach *PROVIDED BOTH THE REPORT WRITER AND THE READER KNOW THE LIMITATIONS OF THE DATA.*

A somewhat more sophisticated alternative to this dilemma is to undertake what is called *DISPROPORTIONATE SAMPLING.* This approach, which usually follows the "main" survey, uses some type of screening mechanism (perhaps a brief interview) to identify potential respondents by subgroup. Respondents which fall into needed (smaller) categories are then questioned further, while those who fall into the larger groups are not. This technique can be frightfully costly, however, and will tend to be fruitless with respect to smallest subgroups (e.g., Native Americans). Furthermore, it poses problems with respect to analyzing all of the responses. In general, then, this approach may prove to be an unwise use of resources in all but the most critical of situations.

The recommendation of this Handbook, which is based on the experiences of Project participants, is that local needs assessments develop and treat subgroup data as *INDICATORS* which merit further attention in the event that it is not possible to generate sufficient responses for a more statistical approach. Apparent differences among ethnic groups, as an example, are valuable in and of themselves. They may not be sufficiently strong to submit to statistical tests, but they can be of considerable use in evaluating various planning and development alternatives.

Drawing the Sample: Mail Needs Assessments

As was mentioned in Chapter II, the major problem with sampling for a community-wide survey is that lists of the total population are rarely if ever available. In effect, then, there is no set of names to sample *FROM*.

With respect to mail assessments, the solutions to this problem are limited. As Erdos writes in the definitive Professional Mail Surveys:

> If the research calls for a probability sample of the population ..., there is no readily available mailing list. To construct one (containing individual names) would be too expensive for most purposes. In some cases, an acceptable, although more limited substitute can be found, for example, a random sample of all persons

> listed in ... telephone directories ... . If, however, creating one is prohibitive, the research cannot be conducted by mail.[41]

The use of a standard telephone directory to develop a list of addresses is problematical in that fewer and fewer listings include addresses. A spot check of the Sacramento telephone book shows 56 listings (roughly 13% of all residential listings) without addresses on a randomly selected page.[42] Added to the somewhat over 20% of the population in urban areas of the West which has unlisted phone numbers, this figure suggests that roughly a third of the community would be eliminated from the assessment were this approach to be taken.

Crisscross directories (privately published directories which list people by street name and number) usually have the same problems associated with them as alphabetical directories, because they depend in part on the alphabetical directories for their content. To the extent that they do this, residents with unlisted numbers are excluded. Moreover, crisscross directories tend to be even more out of date in

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[41] P. 11.

[42] It is probable that this figure would be somewhat lower in rural areas, as is the percentage of unlisted numbers. In the Pacific states in 1973, the percentage of unlisted numbers ranged from 9.8% in counties with under 35,000 residents to 23.3% in counties with 1,100,000 or more residents. Counties with 35,000 - 149,999 residents averaged 10.7% unlisted numbers, and counties with 150,000 - 1,099,999 residents averaged 18.1%. The proportion of unlisted numbers being on the increase, these percentages are probably somewhat higher today. (Figures are from a Marketing and Research Counselors' survey cited in Blankenship, pp. 70-71.)

terms of new listings because they are usually published after the alphabetical directories. Finally, these directories tend to omit small, isolated areas because of the limited market for the sale of such information. (Crisscross directories are primarily published for use in sales.) Accordingly, they are inappropriate for use unless a metropolitan area is involved - and then one encounters a higher incidence of unlisted residences.

In sum, it is essentially unfeasible to mail surveys to residents by name. And although the evidence is not totally conclusive (Kanuk and Berenson 1975), the general experience in survey research is that an impersonal mailing will have an adverse effect on the rate of return vis-a-vis a more personalized approach.

To date, no California community college the Project is aware of has undertaken a comprehensive community-wide needs assessment by mail, so it is impossible to state categorically what might or might not occur were an impersonal mailing to be attempted.[43] Thus although the

[43] Shasta College mailed out a brief "Opinionnaire" addressed to "Resident of the Shasta-Tehama-Trinity Joint Community College District" and obtained rather impressive response rates of between 37% and 50% across five Trustee areas. Merced Community College District mailed a fairly comprehensive survey to voting age residents, but their report indicated neither how potential respondents were addressed nor what the rate of return was (other than that it was "relatively high").

experience of others suggests that considerable effort would have to be expended on follow-ups in order to generate a sufficient response, there is no empirical evidence to support this contention insofar as community colleges are concerned.

There are two ways in which a mailing might be undertaken. The first would be to use the sampling method for a door-to-door survey (see below) and the second would be to bulk-mail to all residents of the community - i.e., not to sample at all. (This latter approach would be particularly feasible for districts which routinely mail class schedules and other information to all residents.)

There are a variety of problems inherent in a mass mail survey, and this approach is probably at best a "quick-and-dirty" needs assessment technique. However, if a *GENERAL SENSE OF THE PERCEPTIONS OF THOSE RESIDENTS LIKELY TO RESPOND TO A MAIL SURVEY* is desired, it may be a viable tactic.

In addition to the problems associated with any mail survey (e.g., the nature of non-respondents; the inability to control who actually responds within a given household), there are two problems peculiar to this approach:

- In all but the smallest communities, the sheer numbers involved will be staggering. Merely keeping track of the response will be a major undertaking. (In a community of 50,000, an initial response of 5% would yield 2,500 completed surveys.)
- Assuming the initial response is proportionately small (a valid assumption in most instances), following up in any way will be quite costly. (Consider that the cost of a second mailing to even 80% of the residents in a community of 30,000 would mean over $1,000 in postage alone.)

Ulitizing the sampling method for a door-to-door survey eliminates of these problems. Unless an exceedingly quick-and-dirty sweep of the community is sufficient, then, it is probable that this technique is optimal in sampling for a mailed assessment.

Drawing the Sample: Door-to-Door Needs Assessment

The purest approach to selecting a sample for a door-to-door survey would be a strictly random one. However, most of the typical random methods are exceedingly time-consuming and therefore rarely practical in all but the smallest areas. In practice, therefore, residential survey samples are usually selected in some systematic and/or stratified manner.

A *SYSTEMATIC SAMPLE* is drawn by taking every *n*th member of the population after making a random start. A *STRATIFIED SAMPLE* is one in which the population is first grouped according to some variable. Random selections are then made from each group. Most stratified samples are drawn proportionately - i.e., each group is represented in the sample in the same proportion as its proportion in the total population - although it is frequently advantageous to use this technique to over-sample (or over-represent) smaller population groups.

Both of these sampling techniques put some strain on the assumption of randomness underlying the statistical analysis of the results. The need for a reasonable amount of efficiency being what it is, however, it is common practice to assume that making a random start is sufficient to satisfy this requirement.

In smaller communities, it may be practical to list all of the streets on index cards and then randomly select the streets to be sampled. If one knows the total number of residences on each street (some city offices have this information, and it is frequently contained in Census reports), a proportional systematic sample can be developed by including every tenth residence on each selected street and continuing to select streets until the total number desired in the sample is obtained.

In larger areas with hundreds of streets, this approach can be excessively time-consuming. An alternative is to mark census tracts on a current map, select census tracts at random and then randomly select the streets to be surveyed within each tract. If the number of residences on a given street is not known, random numbers can be used to select: the intersection at which to start; the corner on which to start (north, south, east, west); and the direction in which to proceed. Every tenth house in that direction can then be included in the sample. (Using this approach for a mail survey would necessitate driving around to identify the street numbers so selected.)

This technique is relatively simple and takes little time to implement. The problem is that in diverse but clustered communities, one runs the risk of excluding the one or two census tracts in which most of a particular type of person lives. In this situation, some type of stratification is called for.

Monterey Peninsula College employed one such technique in conducting their 1978 community survey. They described their approach as follows:[44]

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[44] Monterey Peninsula College, Application for Accreditation, (April 1978), pp. 59 and 93-94.

Sampling Design

As the first step in the sampling design, demographic information was obtained from the County Planning department. These data, consisting of mid census (1976) figures by census tract and city, highlighted the salient characteristics of our community and served as input parameters to our research design ....

The survey staff employed stratified random sampling using census tracts as strata. Using census tracts as strata provides assurance that the sample will reflect the changes in population density within the district. Accordingly, the number of calls to be placed in each census tract was determined by considering the ratio of census tract to total district population.

The population demography varies from one census tract to another; however, it is relatively uniform within any given tract. For example, the population density ranges from a low in the unincorporated regions of our district to a high in the residential areas, but the intra-tract density remains the same. Therefore, it is reasonable to assume that residents of a random selection of target areas within a census tract will be representative of the tract population.

The first step in the sampling procedure was the selection of target areas (streets) within each tract. A transparent X - Y coordinate grid was laid over the tract being sampled. This grid divided the tract into up to one hundred areas. Numbers from a computer-generated list of random coordinate pairs were used to pick one out of the hundred areas. The street closest to the chosen area was selected -- the resolution of "ties" was left to the discretion of the staff. Coordinate pairs falling outside of the tract were discarded. In order to minimize the "miss rate" varying size grids were employed in accordance with the size of each tract so that a small tract would be overlaid by a small grid -- four different sizes of grids made possible a close match between tract and grid size.

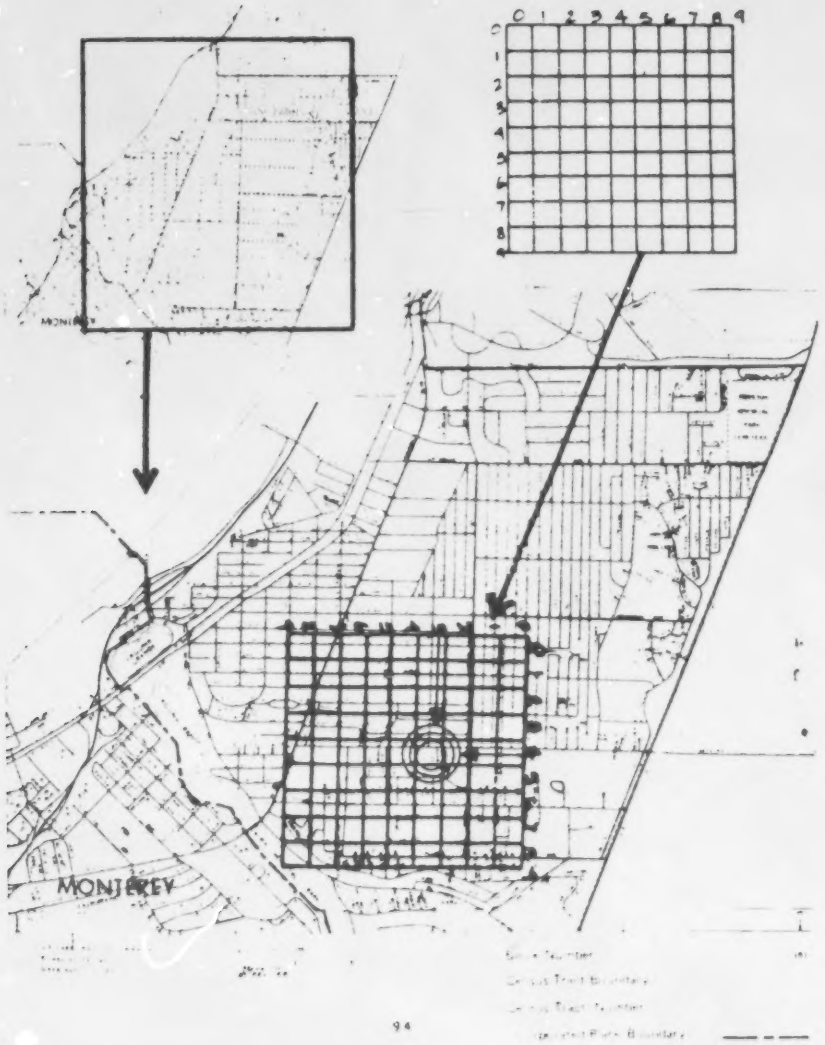
The College's graphic presentation of this approach can be found on page 155.

A final note on numbers. One can assume that a certain percentage of those selected by any of the above means will refuse to be interviewed (or fail to respond if a mail assessment is conducted). One therefore needs to select some multiple of the total number of completed surveys desired.

SOURCE: Monterey Peninsula College Application for Accreditation (April 1978).

The first step of the sampling procedure was the selection of a coordinate grid that was just large enough to cover the target census tract. The grid was placed on the chosen tract, resulting in a subdivision into 100 sub-areas. A computer printout of random number pairs was used to pick grid points.

This figure illustrates the selection of the street name "ARGO" given the coordinate points (3, 4).



In all but very small, homogenous rural areas, one must expect that a fairly sizeable percentage of those contacted in person will refuse to be interviewed. In a door-to-door survey conducted in the spring of 1980, Gavilan College experienced a 28% refusal rate. Most refusers were in:

- Predominately Spanish-surnamed or Spanish-speaking areas
- High density urban areas - particularly apartment buildings with small units
- Distinctly rural areas

Refusal rates of up to 50% are not uncommon in survey research (although one would hope to do substantially better). Accordingly, it is wise to select at least 25% more addresses than one will need surveys and, depending on the nature of the community, perhaps as much as twice the eventual number needed.

If you use one of the sampling techniques for a door-to-door survey to develop addresses for a mail survey, the total number you need to select will be directly related to the amount of effort you plan to expend on follow-up. If you do not follow up at all, you can expect a response rate of less than 20%. One follow-up should put you somewhere in the neighborhood of 45%, and a second effort should yield a return of somewhere around 65%. With successive efforts, it may be possible to approach 80% or 90%, depending again on the nature of the community.

The chart below indicates the probable follow-up effort and the number of addresses needed in an average community in order to achieve a given rate of return, assuming 400 returns are desired.

FOLLOW-UP EFFORT AND SAMPLE SIZE NEEDED
FOR VARIOUS MAIL SURVEY RETURN RATES*

Rate of Return	Probable Follow-up Effort Needed	Approximate Number of Addresses Needed in Sample	Number of Responses
Less Than 20%	None	2,000+	400
45%	One Attempt	890	400
65%	Two Attempts	620	400
80% - 90%	Three or More Attempts	450 - 500	400

* Table adapted from Kanuk and Berenson (1975), p. 442. The follow-up efforts on which these estimates are based were all conducted by mail.

Drawing the Sample: Telephone Needs Assessments

The simplest way to draw the sample for a telephone needs assessment is to select a systematic sample of numbers from the telephone directory. Assuming a refusal rate of 25% (the average rate across all Project participants) and a no-contact-made rate of 10% (an approximation of the number of households never contacted during the

statewide survey), you would need a total of 615 numbers to get 400 completed surveys.[45]

To get these numbers, you would do the following:

- Divide the number of white pages in the phone book by the number of numbers needed. The result of this calculation is *n*.
- Select a random number between 2 and 10 as the page on which to start.[46]
- Select a random number between 1 and 499 for the number to be selected on each page.[47]
- On every *n*th page, select the designated number. If the designated number selected is not a household, select the one immediately preceeding it; if that is also not a household, select the one immediately following it.

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[45] Districts desiring more completed interviews can calculate the number of telephone numbers needed as follows: Numbers = Interviews divided by .65. Thus, if you wanted 1,000 completed interviews: Numbers = 1,000 divided by .65 = 1,538.

[46] Most people avoid the first page of the directory because it consists mostly of businesses.

[47] Tables of random numbers can be found in virtually any statistics textbook.

For example:

- The Los Angeles City phone book contains 1,183 non-government white pages. Dividing this number by 615, we get approximately 2. Suppose the random number we select between 2 and 10 is 5 and the random number we select between 1 and 499 is 38. We therefore start on page 5, select the 38th number on that page, and then select the 38th number on every 2nd following page.

- The Sacramento phone book contains only 546 non-government white pages. In order to get 615 numbers, we will have to get one from each page (except page 1). This will leave us still needing 68 numbers (615 - 546 - 1 = 68). Dividing 546 by 68 gives 8. If we select the random number 54 between 1 and 499, we will select the 54th number from every page. We then select another random number between 1 and 499 - say 102 - and a random number between 2 and 10. Suppose this number is 6. We then go back to page 6, select the 102nd number on that page, and then select the 102nd number on every 8th page thereafter.

The problem with this method, as noted previously, is that it does not include unlisted numbers in the sample. One relatively simple way of including unlisted numbers is to add ten to each number selected. Thus if the 38th number on page 5 of the Los Angeles City phone book were 555-2367, we would include the following number in the sample:

555-2367 + 10 = 555-2377

Besides picking up unlisted numbers, this method will (unfortunately) also get you a fairly sizeable number of nonexistent and business numbers. As a general rule, then, you will need to produce four times as many numbers as you need interviews if you adopt this approach. Thus if you want 400 completed surveys you should "Add 10" to 1,600 (4 x 400) numbers.

While this method will include unlisted numbers, however, it will still not reach new exchanges (the first three digits of the number) and it will tend to underrepresent exchanges which contain a high percentage of new or intentionally unlisted numbers. In short, it will still not generate a completely representative sample.[48]

[48] Because of the higher than average percentages of unlisted and newly listed numbers in urban areas, "Add 10" samples in heavily urbanized districts will be even less representative than the norm. In such areas, the "Add 10" technique is generally not recommended.

The solution to this problem, and the most sophisticated form of telephone survey sampling, is to use *RANDOM DIGIT DIALING*. Assuming that you can obtain the necessary information and that you have access to a computer, it is also probably the most efficient. However, it is the least efficient in terms of the interviewing itself; roughly half of the numbers will be nonexistent and close to 10% will be businesses. You will therefore need approximately six times as many numbers as you desire interviews - or 2,400 numbers to get 400 interviews.[49]

The numbers for random digit dialing are usually produced by computer. The information entered into the computer includes the exchanges in

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[49]These figures, as well as the figures for the "Add 10" technique, apply to moderately populated, typically suburban areas. In urban areas, approximately 35% of the numbers obtained via the "Add 10" technique and one-quarter of the numbers obtained via RDD will yield interviews. You would therefore need to "Add 10" to approximately 1,140 numbers or randomly generate 1,600 numbers for an urban district assessment. In sparsely populated rural areas, on the other hand, substantially fewer numbers may produce results. Columbia College obtained an interview from just slightly over one-twentieth of the numbers it called while experiencing average rates of refusal and no-contact-made. In areas such as this, RDD is probably not worth the effort which you would need to expend on repeated fruitless dialings.

operation in the area and the proportion in which they are assigned.[50] The computer then assigns the last four digits at random and prints out proportional listings on call record sheets, ready for the interviewers to use.

For example, suppose the exchanges in your area are 232, 233, 234, 235 and 236, and the proportions in which they have been assigned are as follows:

Exchange	Proportion of All Phones
232	40%
233	10
234	35
235	5
236	10
	100%

Using this information, the computer would assign random digits (represented by xxxx) as follows for every 20 numbers needed:

[50] Telephone companies typically assign numbers to prefixes in banks of 1000, beginning with 0000 and proceeding sequentially through 9999. Newer prefixes may have no numbers in several banks - e.g., 5000 through 9999. The inclusion of this information in the sampling program can markedly decrease the number of unuseable combinations generated. However, the Project found it to be less than readily available - only one district was able to obtain it. (Districts which do manage to obtain this information can find the corresponding program statements in the Ventura County Community College District's RDD program, which is included in the Technical Supplement.)

232 - xxxx 232 - xxxx 232 - xxxx 232 - xxxx 232 - xxxx 232 - xxxx 232 - xxxx 232 - xxxx	8 Numbers (40% of 20)
233 - xxxx 233 - xxxx	2 Numbers (10% of 20)
234 - xxxx 234 - xxxx 234 - xxxx 234 - xxxx 234 - xxxx 234 - xxxx 234 - xxxx	7 Numbers (35% of 20)
235 - xxxx	1 Number (5% of 20)
236 - xxxx 236 - xxxx	2 Numbers (10% of 20)
	20 Numbers

All of the numbers thus generated are then printed out randomly but proportionally such that every page of 20 contains the same proportions. A sample of the resulting printout is produced as Figure III - 8 on page 165.

Three of the Project participants - Cuesta College, Ventura County Community College District and Yosemite Community College District - undertook to write computer programs which would accomplish this task, and a great deal of credit is owed to the people who did so: Bruce Morgan at Cuesta, Byron Edde at Ventura and Nels Overgaard at Yosemite. Their programs, along with instructions for their use and their specifications, are included in the Technical Supplement.

Most Project participants found both Pacific Telephone Company and General Telephone to be most cooperative in providing the information necessary to generate random telephone numbers. However, this is not always the case. If you cannot obtain the exchanges and their assignment ratios, you will probably be best off using the "Add 10" technique. Assigning numbers in equal proportions to all exchanges and having the sample weight itself (which it will do if it is large enough) leads to an enormous number of unuseable numbers and an excessive waste of time and resources.

FIGURE III - 8

SAMPLE PRINTOUT
RANDOM DIGIT DIALING PROGRAM

NAME OF PERSON CONDUCTING SURVEY -

TELEPHONE CONTACT CODES-
1. NOT ASSIGNED / NOT WORKING
2. BUSINESS
3. NO ANSWER
4. BUSY SIGNAL
5. NO ADULT AT HOME
6. CALL BACK, TIME -
7. INTERRUPTED IN PROGRESS, CALL BACK, TIME -
8. INTERRUPTED IN PROGRESS, TERMINATED
9. LANGUAGE BARRIER
10. REFUSED
11. COMPLETED

PHONE NUMBER	DATE CALLED	TIME	RESULT CODE	DATE CALLED	TIME	RESULT CODE	DATE CALLED	TIME	RESULT CODE
929-5495	/ /			/ /			/ /		
481-1957	/ /			/ /			/ /		
543-4875	/ /			/ /			/ /		
543-4958	/ /			/ /			/ /		
544-8751	/ /			/ /			/ /		
543-0766	/ /			/ /			/ /		
466-7631	/ /			/ /			/ /		
543-9001	/ /			/ /			/ /		
489-4863	/ /			/ /			/ /		
489-5985	/ /			/ /			/ /		

SOURCE: Cuesta Community College District, Needs Assessment Sampling Program Developed by Bruce Morgan

Implementing the Sample

Selecting a sample of necessary and sufficient size in a random manner is probably the most theoretically and technically complex aspect of sampling. In the long run, however, it tends not to be the most difficult. The hard work is usually involved in actually implementing the sample.

Because the theory underlying statistics assumes an equal (or other known) probability of occurrence of any given event as well as a 100% rate of sample implementation, what you *do* with your sample is just as important as how you choose it. Specifically, you will need to ensure that:

- The maximum feasible effort is made to contact every sample member and obtain cooperation
- Each and every member of the sample has an equal opportunity to participate in the survey

In practice, as you conduct your assessment, you will need to:

- Make sufficient call-backs (or follow-up mailings) such that you are reasonably certain that additional attempts to contact sample members would not be cost-effective. At a minimum, however, the sample should be followed up until the response rate reaches 50%. (Call-back strategy is discussed in more detail in Chapter IV.)

- Attempt to contact each sample an equal number of times until you secure a response, obtain a refusal or encounter some barrier to participation which is external to your approach (e.g., a language into which your instrument was not translated). Thus if your goal is 400 interviews and you obtain that number after contacting 90% of your sample, it is not legitimate simply to stop. The other 10% must receive an initial contact as well.

Both of these strategies are frequently tedious and admittedly time-consuming. Omitting them, however, will throw both the sample and the results into question. Sampling permits us to draw conclusions on the basis of a miniscule fraction of the population - but only if that fraction is pursued with persistence and rigorous attention to equal opportunity.

Summary

Step 6 involves drawing a survey sample from the total population. The *GENERAL CONSIDERATIONS* which need to be borne in mind in sampling include the following:

- The confidence you can have in your results will be directly related to the size of your sample.

- The confidence you can have in your results as well as the ways in which you will be able legitimately to analyze them will be directly related to the way in which you select your sample.
- The confidence you can have in your results as well as the extent to which you can legitimately subject them to statistical manipulation will be directly related to the manner in which you implement your sample.
- In sampling, there is a certain risk of being imprecise when we measure a sample rather than the entire population. This risk has two components: the extent to which sample results may differ from the results were the entire population to be measured (*tolerance*); and the chance that a peculiar sample will arise and increase the extent of that difference (*confidence*).

In particular:

- For most populations, a sample of approximately 400 will allow one to be 95% confident that the sample results are within $\pm$ 5% of the figures a survey of the entire population would yield.

- In order for subgroup analysis to be conducted, there should be a minimum of 100 respondents in each subgroup to be examined. This number gives a tolerance of ± 10% at the 95% confidence level.
- Confidence and tolerance specifications are based on the assumption that the sample was randomly selected and fully implemented.

In practice, samples for community-wide surveys are rarely selected in a purely random manner. With respect to *Mail Assessments*, the fundamental problem is that there is no list of names to sample from. Alternatives include:

- Sampling from telephone directories
- Not sampling at all (i.e., mailing to all residents)
- Using the sampling techniques for a door-to-door survey

For reasons of representativeness as well as efficiency, this last technique is probably optimal in most circumstances.

Samples for *Door-to-Door Needs Assessments* are typically drawn in a systematic or stratified systematic manner using community maps. Residences to be surveyed can be selected by:

- Randomly selecting from among all of the community's streets and then including every tenth residence on each selected street in the sample

- Selecting census tracts at random, selecting streets within census tracts at random, randomly selecting a starting point on each street selected and then surveying every 10th residence in a randomly determined direction
- Stratifying on the basis of census tract density, selecting a street at random from each census tract and then randomly selecting a number on that street to survey

In smaller communities, the first of these approaches (which is the most random) may be feasible. In larger areas, one of the latter two approaches will probably prove to be more practical.

With respect to *Telephone Assessments*, numbers can be selected:

- In a systematic manner from telephone directories
- By "Adding 10" to numbers systematically selected from telephone directories
- By generating series of random digits and applying them to telephone prefixes (random digit dialing)

The last of these techniques is the most sophisticated and will yield the most representative sample. In urban areas, it is by far the preferred technique due to the above-average percentages of unlisted and newly listed numbers. However, random digit dialing is not particularly

practical when the proportions in which telephone prefixes have been assigned are unknown. In the absence of this information, the "Add 10" technique is probably more viable. The "Add 10" technique is also preferable in sparsely populated rural areas.

Sample *Implementation* is as important as sample selection in generating valid and reliable results. Of concern in this regard are ensuring that:

- The maximum possible effort is made to contact and obtain cooperation from every member of the sample
- Each member of the sample has an equal opportunity to be included in the assessment

Specifically, you will need to:

- Make sufficient call-back or follow-up attempts such that you achieve a minimum response of 50%
- Make contact with each sample member an equal number of times, regardless of the number of interviews you complete, until a member cooperates, refuses or is found to be unable to participate for reasons unrelated to your contact strategy

PHASE II: IMPLEMENTING AND COORDINATING

After reading close to 200 pages devoted to planning and undertaking six major decision-making processes, the reader will undoubtedly be relieved to know that it is now time actually to *DO* something. To wit: actually conduct the assessment. During this phase, you will need to put on your "Mr./Ms. Organized" hat so that you can accomplish the following:

- Recruiting and Training Staff
- Scheduling the Assessment
- Supervising the Assessors

These, then, are the three "action" steps of an assessment, and it is indeed an active time. It demands not only considerable organizational ability, but also a high level of concentrated energy. (One participating coordinator reported putting in 65 hours of overtime during this phase.) Before you proceed, then, you may want to consider putting aside a few other activities for the duration. Things will probably prove to be *very* hectic ...

STEP 7: RECRUITING AND TRAINING STAFF [51]

Introduction

By this time, you undoubtedly have (or at least we hope you have) the cooperation and active involvement of the key assessment planning staff:

- The overall coordinator
- The data processing specialist(s)
- The secretary or clerk-typist

You may also have identified and involved the person upon whom almost everything will focus during the assessment itself:

- The supervisor of day-to-day assessment activities [52]

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[51] Steps 7, 8 and 9 apply only if you plan to conduct a telephone or person-to-person assessment. If you plan to conduct your assessment by mail, please skip to Step 10 beginning on page 210.

[52] In general, it is probably a good idea to involve this individual as early as possible, because familiarity with the assessment (and particularly with the instrument) will make his or her job go considerably more smoothly when the assessment begins. Project participants who were not able to do so, however, found that a credible assessment could be mounted if this person were not actively involved until the interviewer training session.

And you may even have given some consideration to:

- The person who will recruit interviewers

and

- The person who will train the interviewers

Having worked with some or even all of these people over the past month or so, often intensely, you may be surprised that:

The most critical actors in the assessment drama have yet to be identified.

In other words:

The success or failure of your assessment will be directly related to the capability and reliability of your interviewers.

The corollary of which is:

The extent to which you contemplate an early retirement, an unscheduled vacation or a career change during your assessment will be inversely related to the capability and reliability of your interviewers.

What this means is that you need to surround yourself with a group of pleasant and talented people who will stick with you throughout, be exemplary representatives of your district, follow instructions to the letter and not make any mistakes. Impossible and totally unrealistic? Perhaps somewhat exaggerated - but not as much as you may think. For the fact of the matter is (yet another surprise):

They are probably on your campus right now.

Which is not, unfortunately, to say that you can walk out the door, enlist a passing student or two and set said students to interviewing. (There's a bit of work to be done in between.) Which *IS* to say, however, that in the experience of the Project, students and members of the community can be (and have proved to be) first-rate interviewers (with a little work ...).

Specifically, you will need to:

- Recruit potential interviewers
- Screen all applicants
- Train acceptable candidates
- Weed out those who do not succeed in training

It is admittedly an arduous process. In the end, however, it will pay enormous dividends. The things you will need to look for and consider during each step are discussed in the sections which follow.

Recruiting

Perhaps the most difficult and nerve-wracking aspect of assembling a cadre of interviewers is getting a pool of people from which to select. People simply do not rush to sign up. Participating districts tried a variety of recruiting methods, most of which were at best marginally successful. Accordingly, you will do your sanity a favor if you allow a good two to three weeks for this step.

In the Project's experience, advertising in the student newspaper is the *LEAST* effective method of recruitment; you will probably only get a handful of applicants this way. A somewhat more successful approach is to circulate a memo to division directors or department chairs requesting their assistance in identifying candidates; the one participating district which tried this tactic got several responses and recruited two of its best interviewers in this manner. *MOST* successful, however, is placing a classified advertisement in the local paper. An example from the Project, which generated over 20 responses, is reproduced below.

Survey for pay

WANT TO BE PART OF AN INTERESTING COMMUNITY SURVEY - A Vocational Education Needs Assessment? Project includes calling during evening and Saturday hours, from a central point, using especially-prepared questions. Pay ~~$3.20~~ per hour. Call Gerald Olsen, Ventura County Community College District, for interview by phone, 642-0161 or 647-7387, ~~Ext. 33~~.

The foregoing discussion assumes that you will be paying your interviewers. If you don't want (or can't afford) to pay them, there is another option to consider: including material on survey research methods and the opportunity to participate in an actual survey in a short-course or course.

None of the Project participants took this tack, finding it faster and somewhat more efficient to pay (usually at the minimum wage, although in a few instances at a somewhat higher level in order to enhance the "prestige value" of the work.) However, there are two models for incorporating survey work into new or existing courses which have been used or proposed for similar assessments in the State's community colleges.

- Unit on Survey Research. This approach involves developing and integrating a unit on survey research into an existing social science or marketing course. The actual conduct of the survey is then substituted for a term paper, exam or other required assignment.

  The advantages of this approach are that it requires relatively little lead time, is rapidly accomplished and has a built-in pool of potential interviewers. Moreover, only those students who wish (or are qualified) to participate need do so; those who are hesitant or not suited for the work can do the regular assignment.

The primary disadvantage of this approach is that it requires the identification and recruitment of an instructor willing to abandon a portion of his or her normal curriculum and coursework. In addition, it is often difficult in this type of situation to tell a student that he or she is not suitable and must therefore do the regular assignment.

- Survey Research Course or Short-Course. This approach involves designing and mounting an entire course (or short-course) on survey research. Apparently, this has not yet been attempted in a California community college. However, Napa College is proposing to do so in the Fall of 1980, and their tentative course outline is included for reference in the Technical Supplement.

This approach has the advantage of permitting some advance screening of potential interviewers and of clarifying the fact that successful students will be expected actually to conduct interviews. However, it also has one significant disadvantage: it takes considerable time both to

plan and to implement, with the possible result that the assessment's momentum might be lost. Finally, there is always the question of whether the course will "make" and enroll sufficient students to conduct the necessary interviews.

There is no particular "magic number" when it comes to a sufficient number of students (and/or members of the community) to conduct the number of interviews needed. In general, however, you will probably want to aim for around 20 applicants. Screening will eliminate a few, training will eliminate a few more, and then natural attrition will claim its casualities. If your district is "average,"[53] you will probably wind up with around ten interviewers, which is a good number from the perspective of elapsed time, supervision and (in the case of a telephone survey) available telephones and/or outside lines (assuming not everyone can work during every calling session).

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[53] The term "average" in this context refers both to available facilities (particularly telephones and outside lines) and to student motivation and persistence. If your outside calling capability is severely limited (e.g., by the number of lines or by the need to go through an operator), then you may have to settle for fewer interviewers and a longer calling period (in elapsed time). If your students tend to be of less than "average" motivation and persistence, on the other hand, you may want to train more interviewers than you will need. (One participating district in this situation trained 15 people and wound up with 3 interviewers.)

The above figures assume a goal of 400 completed interviews. A larger assessment which was part of the Project had the following experience:

Responses to Advertisements	31
Number Screened and Trained	21
Number Completing Training	18
Number of Interviewers	16

As a rule of thumb, then, you will probably want to recruit twice as many people as you need (or can effectively use) interviewers.

Screening

Egalitarian though we all would like to be, the fact of the matter is that not everyone can even *be* a telephone or personal interviewer, much less a good one. To a certain extent, self-selection will operate to screen out those who are not up to the task. People who lack the maturity or confidence to call total strangers, for example, either will not apply or will quietly withdraw when they realize what is expected of them. There are several qualities, however, which you will have to look for yourself. Specifically:

- It is *ESSENTIAL* that interviewers:

- Be able to read simple English (and/or any other language into which the instrument will be translated) in a reasonably flowing manner

- Have speech patterns which are not so heavily accented or limited that they are difficult or impossible to understand

- Be sufficiently astute to comprehend the requirements of the job and the various types of uniformity it demands

- Be able and willing to hear and record accurately and to follow directions without deviation from a predetermined pattern

- It is *VIRTUALLY ESSENTIAL* that interviewers:

  - Have pleasant telephone voices
  - Be dependable in terms of punctuality, regularity of attendance and adequate notification in the case of a necessary absence

At a minimum, potential interviewers should be pre-screened to select out those with marginal reading ability and those with unintelligible accents or disabling speech limitations. If this is not done in advance, the result will be unwarranted embarrassment before peers during training, and some unpleasant exits may well occur. Secondly, it is wise to make some attempt to determine whether the applicant's telephone voice is sufficiently pleasant not to offend potential respondents.

Admittedly, the term "pleasant telephone voice" is highly subjective. Be assured, however: if you spend any time on the phone at all, you'll know without hesitation when someone *DOESN'T* have one. Harshness, monotony, an absence of friendliness or human-ness, or a frivolous approach to the telephone are almost immediately apparent if you listen carefully. Unfortunately, they are equally apparent to even the most casual potential respondent, and can result in a damagingly high rate of refusals or incomplete interviews.

Ventura County Community College District took a creative approach to determining what some refer to as "telephone personality": they screened potential interviewers over the phone. Apparently, the technique worked admirably: none of those screened in this matter had to be let go because of unsuitable voices.

Finally, you will probably save yourself a lot of grief in the long run if you do a quick reference check to ascertain the reliability of your candidates. Frustration can almost be defined as scheduling a supervisor for two weeks of calling sessions with ten interviewers per session and winding up having to arrange for the supervision of three interviewers over a period of four or five weeks. (And perhaps miss a critical assessment deadline in the bargain.)

Having ascertained reading ability, linguistic facility, pleasantry and dependability, you will probably have exhausted what can reasonably be expected from a limited screening session. Regrettably, you will still have two key qualities to go: are your candidates astute enough to comprehend what is expected of them; and will they follow directions?

If you want to be elaborate about it, you can probably obtain answers to these questions in checking applicants' references. However, you may well not get *THE* answers. For the unhappy truth of the matter is that an ostensibly "model" citizen in other environments may turn out to be a rotten interviewer.

Why? Because the essence of this particular type of interviewing is uniformity and regularity. And that means: no editorializing, no commentary and no suggestive intonation. Which for people with inquisitive minds and well-formed opinions can be *ver-r-ry bor-r-r-ring*. And frustrating. And even alienating.

It is of course possible to get a candidate's relatively uninformed perception of the matter during a screening interview. ("Are you *sure* you want to read this question 100 times in the next two weeks??") However, it probably won't be until reality descends that the truth is really known. Meanwhile, you run the risk of discouraging some first-rate interviewers before they have a chance to try it and find out that it is actually fun.

The author's recommendation is that you leave this final assessment to the training session or even to the first day of actual interviewing. The one or two people who can't handle the regimentation will be quite noticeable if you are watching for them and it should be a fairly simple matter (if you've warned everybody in advance that not all trainees are expected to qualify) politely to let them go. (If you're really lucky, as happened in several cases during the course of the Project, they'll let themselves go.)

Training

Perhaps the most critical single aspect of your assessment will involve the caliber of your interviewer training session. If you botch a question design, you can always throw it out. If your sample is a little skewed, you can make adjustments or allowances. But if your

interviewers are poorly trained, there is little you can do to correct the damage. Moreover, you may not even be aware that the damage is being done unless you have a very sharp supervisor. (Recall the person with a penchant for rephrasing the questions who was described in Chapter II. Of course if your interviewers are alienating district residents, you will experience instant awareness via a thunder of irate calls on Day 2.) In sum: it pays to devote the time and resources necessary for thorough interviewer training.

Districts which participated in the Project - not to mention potential trainees - were aghast at the thought of devoting eight or nine (paid) hours to training. ("But I talk on the telephone every day. People don't need to be trained to do *THAT!*") Should you encounter the same resistance, be patient: if your session is a good one, it won't be long before you start hearing the following (to quote a trainee from the Columbia College service area).

> I thought everyone was crazy - just wasting the taxpayers' money again. I don't think I've ever been more totally wrong in my life. I had no *IDEA* there was so much involved in making a simple phone call.

If patience, forebearance and the experience of others don't suffice, you may want to quote Blankenship on the training of interviewers for professional market research:

> General training typically consists of in-house instruction and practice interviewing ... Most of (the) in-house programs take a day or more ... At Burke (Marketing Research) it extends over three days ... The time period for ... practice calls runs from several hours on up. At Trendex, nearly 100 interviews are done on different kinds of studies before a person goes onto an actual study. [54]

This is then followed by briefing and practice for a particular study. In short: eight or nine hours is a severely limited training period. This amount of time was used during the Project because it was all participating districts could or would spare. In the author's opinion, it was barely sufficient and put extremely heavy demands on participants. Moreover, many districts had to do additional work after the session was over. A two-day session with six hours of training per day would put less strain on all involved.

Speaking of "all involved": precisely whom does one involve in such a session? Again: if yours is an "average" district, the chances are fairly good that you may need to bring in an outsider to conduct this phase of your assessment. Only one Project participant was able to

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[54] Pp. 117-118.

identify someone on campus who they believed had the background to conduct an interviewer training session, and that individual later commented:

> A lot of people assumed that because my degree is in sociology, I'm a hot-shot survey researcher - and I've never done any survey research. I did a *LOT* of reading ...

If you're looking on campus for someone who *has* conducted survey research, you will be most likely to find such an individual in either the social science, psychology or business/marketing areas. Should you in fact be average and your on-campus search prove unproductive, there are a number of independent consultants (and consulting firms) which can assist you for a relatively modest fee. Finally, in some areas of the state, Pacific Telephone Company offers telephone interviewer training.[55]

Included in the Technical Supplement are two sample training session agendas from the Project which you may find useful in structuring your own session. The Supplement also contains a training session outline and a series of handouts which the Project prepared for its own sessions and which those districts undertaking their own training are welcome either to adapt or to adopt. Finally, you may wish to consult the

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[55] Alworth, Cohen and McCuen (1977), p.2.

University of Michigan Survey Research Center's Interviewer's Manual, which is considered by many to be *the* authoritative work on interviewing techniques.

Weeding

If all went according to plan, somewhere around 15 people showed up at your training session. A handful were "naturals" who caught on right away, or even had previous interviewing experience. Another six or seven had to labor a bit and may not be quite ready to hit the phones yet, but your trainer knows that with a little more practice, they will make the team and serve you well. In our experience, that leaves two or three who are giving you a colossal headache.

Because:

- They can't or won't follow directions
- Their voices jangle your nerves (or put you to sleep)
- They haven't showed up half the time
- They are so nervous that they won't even attempt a practice interview
- They still haven't the foggiest notion of what this is all about

Again in our experience, those individuals will never make it no matter what you do. (One district tried three small-group sessions and even speech therapy, to no avail.) To save everyone headaches and heartaches, then, our advice is that you be fearless, pay them for their time in training and let them go. If it has been clear all along that not everyone (and in particular many highly capable and intelligent people) makes a good interviewer, there should be no hard feelings as a result. And you will wind up with a group of competent interviewers whom you can rely on and whose work you will not have to sit around and question.

STEP 8: SCHEDULING

Now that you have your interviewing team, you have to decide when you are going to use them. Basically, that involves making up some sort of schedule so that your supervisor will know who is expected to be on duty when.

In developing an interviewing schedule, there are four factors you will need to consider:

- The days and hours of calling
- Your interviewers' availability
- The availability of telephones in a central location
- The availability of outside lines

Each of these factors is discussed in the sections which follow.

Days and Hours of Calling

One of the primary reasons why it is so difficult to recruit and hold telephone (or door-to-door) needs assessment interviewers is that all of the calling (or door bell-ringing) has to be done during the late afternoon and evening hours and on weekends. This approach

maximizes the chance of including working people in the sample and minimizes the possibility of interviewing a disproportionate number of housewives (or, since we are living in the 1980's, househusbands).[56] (Aside from sampling considerations, you may well find that the evening hours are the only weekday times you can get access to a sufficient number of telephones.)

In general, you should plan to start calling no earlier than 4:00 p.m. during the week and to complete the evening's calls by 9:00 p.m. Also in general, Monday through Thursday evenings will be the most productive times to call; Friday evening may not be worth the trouble given the relatively small percentage of people who are home.

One participating district encountered problems with Monday evenings: people seemed to be in bad moods, and there were substantially more refusals than on other evenings. Another district found that the hours between 5:00 and 7:00 p.m. were problematical because of the conflict with dinner. (However, people were at least home, and a call-back could be arranged.) Most districts encountered neither problem, but you may want to experiment a bit to discover the optimal days and hours in your area.

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[56] The one Project participant which broke this rule wound up with a sample of 59% women - roughly 12% more than the demographics of the service area suggested. Such a sizeable discrepancy can have a significant biasing effect on the results.

With respect to weekends, opinions and experiences vary. Saturdays during the day (up to 5:00 or 6:00 p.m.) are almost universally productive; calling can start as early as 9:00 a.m. Assuming you can get anyone to come to work on Sunday (most districts could not), the afternoon and evening hours can be highly productive in some areas, although in others the time appears to be wasted. A little experimentation may again be in order to determine what will work in your area.

Finally, there are a few times which you will want to avoid in your overall schedule, regardless of the days and hours you call:

- Major holidays and holiday weekends
- Election days, and probably the days before and after (particularly if a controversial government issue is involved)
- Tax time (April 15 and a few days before and after)
- Midterm and final examination periods (if your interviewers are students)

Availability of Interviewers

Regardless of whether you use regular students or members of the community as interviewers, it is generally unrealistic to assume that any given individual will be able or willing to work during all of your

calling sessions. Community members will have family and home obligations;[57] students will also have evening classes.

What worked most effectively for Project participants was to ask interviewers to indicate their days and hours of availability during training. Some districts established a minimum requirement for participation, while others (especially those having trouble with recruitment) did not. A sample form for this request and the resulting schedule can be found in the Technical Supplement.

As a general rule of thumb, you should plan to complete all of your calls within two weeks if at all possible and within three weeks at an absolute maximum. After the end of two weeks or so, interest in the project tends to decline sharply and attrition becomes a real problem. Moreover, every day you add increases the probability of an event occuring which will affect subsequent responses.

If you use random digit dialing, have interviewers of "average" capability, have a moderately long instrument (10 to 12 minutes) and a service area in which the refusal and not-at-home rates are typical, you can expect your team to average 1.5 completed interviewers per person

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[57] For reasons unknown, interviewing teams have a tendency to be predominantly female. Self-selection plays a major role; relatively few men apply in the first place. In addition, men appear to be less amenable to interviewer training and tend to be the "first fired" (a revolutionary change). Accordingly, obligations with respect to home and family will probably play a greater role with your team than they might with a more balanced workforce.

per hour. If you plan to finish your survey in two weeks, you can use this figure to calculate how many interviewers you will need on duty during each session to complete a given number of interviews. For example:

> You plan to make your calls Monday through Thursday between 5:00 and 9:00 p.m. and Saturdays, in two shifts,[58] between 10:00 a.m. and 6:00 p.m. This represents 32 evening hours (8 evenings x 4 hours per day) and 16 weekend hours (2 Saturdays x 8 hours per Saturday), for a total of 48 calling hours.
>
> A rate of 1.5 interviews per person-hour times 48 hours yields 72 interviews for each person scheduled. Dividing this into the number of interviews desired, say 400, will give you the number of people you need: $400 \div 72 = 5.56$. For safety's sake, round upward: you will need to schedule 6 people for each calling hour.

[58] Even the best interviewers become fatigued after three or four hours of calling, and inexperienced interviewers frequently cannot handle even that much. Until your team gains experience, you may want to limit them to two or three hours on the phone plus some "debriefing" time to handle questions, problems or concerns. Sessions of more than four hours' duration should always be split into shifts.

One final note: human nature being what it is, it is probable that not everyone who is scheduled will show up. (One participant submits the following list of "excuses": got sick; had an accident; sick child; forgot; don't want to today.) Giving interviewers a list of team members' names and phone numbers and asking them to find substitutes works to a certain extent but is far from being 100% successful. You will therefore be wise to schedule two or three more people than you actually need in order to prevent the survey from dragging on indefinitely.

Availability of Telephones and Outside Lines

To the extent that you want to conduct your needs assessment in a truly professional manner, you will want to see to it that your interviewers are constantly monitored and supervised. In the final analysis, this is the only way in which errors (or outright cheating) can be detected, improper approaches corrected, problems resolved and the integrity of the assessment guaranteed. To do this efficiently, however, you will need to have all of your calls made from a central location. The problem then becomes: where do you find the phones?

Most colleges and districts have sufficient telephones in their administrative offices to accommodate six to ten interviewers in

a reasonably compact space[59] providing all the calling is done outside regular business hours. If yours does not, your only alternative will be to decrease the number of interviewers on duty and to expand the total elapsed time you devote to calling accordingly.

Outside lines present a more typical problem, particularly insofar as toll calls are concerned. A variety of situations may either make it impossible to have more than a handful of interviewers on duty at any one time or make it difficult to place toll calls efficiently:

- There are a limited number of outside lines
- Most telephones are "locked" insofar as the placing of outside calls is concerned
- All toll calls have to go through a switchboard operator
- All toll calls have to be logged and reported
- Different prefixes require the use of different telephones and/or dialing combinations (e.g., 9, 8, 8+1)

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[59] It was the general consensus of Project participants that interviewers work better in individual offices or spaces, although this makes monitoring and supervision somewhat more difficult. Calling in an open area tends to create problems with voice overlap and to make accurate hearing more difficult. Perhaps the ideal setting would be a row of partitioned spaces or contiguous offices.

There are few alternatives to the first two of these situations unless you are able by some miracle to bring in an extra line or to "unlock" a few telephones for the duration; you may simply have to settle for a longer calling period and fewer interviewers. The last three will not necessitate a decrease in staff or an increase in time, but they will probably slow you down a bit and impede efficiency (plus frustrating your interviewers). Some possibilities you might explore if your system seems unduly complicated:

- Get approval for the switchboard automatically to place your interviewers' calls
- Only use telephones which bypass the switchboard
- Develop a total toll-call budget and obtain exemption from regular reporting requirements on this basis
- Prepare a prefix-by-prefix set of calling instructions for your interviewers' reference

Regardless of which of these situations you encounter, you will probably have to do a certain amoung of juggling and finagling to minimize the system's impact on your assessment. You may also have to provide more than average encouragement to your interviewers if the process of placing calls is excessively time-consuming and progress seems frightfully slow. If terminal frustration (typically the immediate precursor of resignation) appears to be setting in, you may

want to reinstitute your search for solutions before you are left with only one or two interviewers.

The scheduling of an assessment, in sum, involves weighing and balancing nine relatively unpredictable variables:

- The days and hours of calling (some of which will depend on local circumstances)
- Particular dates and time periods which will need to be avoided
- The availability of your interviewers
- The reliability of your interviewers in showing up and/or finding substitutes
- The extent to which your interviewers' interest can be maintained over time
- The availability of telephones in a central location
- The availability of outside lines
- The extent to which outside (and particularly toll) calls can be readily and efficiently placed
- The extent to which any impediments to placing outside or toll calls frustrate or discourage your interviewers

Weathering and successfully completing this process will therefore demand not only considerable advance planning, but the ability and willingness to shift tactics mid-way if your initial approaches do not appear to be working.

STEP 9: SUPERVISING THE ASSESSORS

The primary reason you will want to ensure that your assessment team is constantly and carefully supervised is that you won't know what you're getting if you don't. Even if no one elects to make up interviews or to call up a group of long-lost friends, there are a variety of actions which can really foul up the results unless they are rapidly detected and corrected. Some examples from the Project:

- An interviewer who failed to mark the responses as she went along and then tried to remember them after the interview had been completed
- An interviewer who rephrased questions to suit his perspective on the issues involved
- An interviewer who argued with respondents
- An interviewer who editorialized about the meaning of various questions
- An interviewer who made up answers to respondents' questions and wound up convincing one resident that the district maintained a computer bank of unlisted phone numbers
- A non-reader who successfully memorized the instrument during training and subsequently forgot most of it

An observant supervisor who is constantly "listening in" (typically by walking around unobtrusively from workstation to workstation) should be able to spot behaviors such as these very early in the process. He or she can then determine whether the interviewer is willing or able to change the behavior or will have to be let go.

Clearly, this type of supervisory observation is most critical during the first few days of interviewing. It needs to continue throughout the entire process, however, for the following reasons:

- As interviewers tire of their task, they may tend to become sloppy
- As interviewers become bored by the constant and unvarying repetition, the temptation to comment or to editorialize will tend to increase
- As interviewers begin to see patterns in responses, they may tend to start hearing the patterns rather than the actual answers

In addition to observing and monitoring interviewers, the supervisor has several other critical functions to perform during the interviewing period. These include:

- Maintaining morale
- Handling problems and questions
- Verifying interviews
- Checking and logging completed instruments

In the Project's experience, interviewer morale during a needs assessment starts out exceptionally high on Day 1 and declines on a daily basis thereafter. If no effort is made to reverse this trend, attrition will become a real and increasingly important concern. The supervisor's behavior and approach can have a marked influence in ensuring that this does not come to pass.

Project participants used two techniques which appeared to be successful in retaining interviewers and their enthusiasm. The first was to have the supervisor actually conduct interviews. This approach communicated to interviewers that the supervisor was a bona fide team member and generated a sense of "we're all in this together." The second was to hold a daily pre-calling discussion session during which concerns could be shared and frustrations aired. (Scheduling a daily debriefing session was markedly less successful; most interviewers were in a hurry to get home.)

Another advantage of a daily group discussion is that it provides an opportunity for the exploration of general problems and questions.

Particularly during the early days of calling, an almost infinite variety of questions and problems will undoubtedly arise. Many of these will be specific to a particular call ("This person says the college shouldn't have flunked him; what do I say??"),[60] but many will apply to most if not all team members and will merit the consideration of the group as a whole. The supervisor will have the corresponding advantage of being able to give a single and by definition consistent response.

The third supervisory function involves verifying a random sample of completed interviews. Most Project participants viewed this task as being optional and somewhat of a luxury, and it is indeed a somewhat more sophisticated approach than a community college needs assessment need take. A professional survey, however, will involve some form of verification.

The simplest kind of verification involves selecting a random sample of each interviewer's completed interviews (one in five is the rule of thumb among many professionals) and re-calling the respondent to be sure that he or she was in fact interviewed. (Hence the request for the respondent's name at the end of the interview; it is considerably more efficient and polite to ask for an individual by name rather than

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[60] As a general rule, critical questions or complaints from respondents should be handled by the supervisor. It is unfair and unrealistic to expect students or members of the community to defend the institution or its policies, particularly inasmuch as they may be unaware of the facts. Supervisors should also be prepared to deal with the (rare) respondent who is truly rude or obnoxious.

to ask for "someone in your household who was interviewed by phone about colleges.")

Unfortunately from the perspective of the time involved in anything more extensive, this simple form of verification is incapable of detecting the most typical forms of interviewer error or falsifications. Accordingly, most professional firms also verify the length of the interview and the responses to selected questions.

The existence of the interview having been verified, the respondent is then asked approximately how long it lasted. If it was unusually short, it may have been rushed or incomplete. If it (and several others by the same interviewer) was abnormally long, on the other hand, the interviewer may be making comments or conducting an unnecessarily lengthy post-interview.[61] Finally, a portion of the interview is actually repeated and responses are compared. Because the respondent may have changed his or her mind in the interim with respect to questions of opinion, the typical approach is to verify two or three factual questions (usually from the respondent information section of the instrument).

If there are consistent discrepancies in a particular interviewer's work, suspicion is in order. The interviewer may be omitting a

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[61] For a description of the post-interview technique, please see the interviewer handout "Responses to Resisters and Questioners" in the Technical Supplement.

question or questions, sequencing incorrectly, hearing inaccurately or recording improperly. In cases such as this, it is not uncommon for professionals to verify 100% of the interviewer's work until the cause is detected and the problem corrected. If the same error appears in several interviewers' work, however, suspect the instrument: it may be poorly structured or difficult to follow.

The supervisor's final function provides an alternative method of detecting improper recording and unclear instrument construction. This function involves checking each completed instrument to be sure that it has been filled in correctly and legibly, that appropriate branches were taken and that none of the required information was omitted. In the event that this is not the case, you have a few alternatives (all more or less unpalatable):

- Re-call the respondent and obtain the correct or omitted answers
- Throw the instrument out (*not* a wise practice from the point of view of the sample in all but an isolated instance or two)
- Dismiss the interviewer (really the only alternative if the errors or omissions persist)

In short: it's better to get the job done right in the first place, which is one reason why sound training and sufficient prior practice are so vital.

There is one situation in which none of the above alternatives are appropriate: if most (or all) interviewers are making the same error or omission. In this case, the instrument is probably the culprit.[62] Your alternatives here are to:

- Throw out the offending question(s)
- Redesign the problem area (in which case we hope you caught it early on, because no previously completed instruments will be comparable)
- Provide your interviewers with additional instructions (again, we hope you caught your error early, for the same reason as above)

Again: some rather unpleasant alternatives. Which is why solid pretesting is so vital.

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[62] The same suspicion should enter your mind if interviewers are constantly queried about a particular question. It would be wise to devote a portion of your daily discussion during the early stages of the interviewing to determining whether this is the case so assessment staff can eliminate or correct an unclear question.

Having checked each instrument for completeness, legibility and accuracy, the supervisor will need to:

- Assign each instrument a consecutive ID number
- Either assign codes to open-ended questions or flag the appropriate instruments for the person to whom the coding task has been assigned
- Note the day's totals in some type of log
- Batch the day's work for transmittal to the coder or to data processing

One final note of a clerical nature: someone will have to keep and verify attendance during this process. It is only natural that among interviewers' primary concerns (particularly if they are students) will be how much and when they are to be paid. Hopefully, the details will have been worked out and the appropriate papers signed long before the interviewing commences. Answering questions of this nature should *NOT* be among the supervisor's responsibilities, but will wind up being so if the matter hasn't already been settled. However, someone will need to ascertain the hours each interviewer worked and certify that he or she should be paid.

In sum, the supervisor's role is a complex and demanding one: part all-seeing and all-knowing observer, part mother or father confessor, part problem-solver and question answerer, part stern task master, and part glorified clerk. It is a job which takes considerable energy, patience, fortutide, humanity - and an affinity for long, late hours. (One top in the selection process: a night owl will do better than an early riser.) As was said before - all but one of the most respected and successful supervisors during the Project were lead secretaries, perhaps because these qualities tend to go with the secretarial territory. (The other was a highly organized and energetic director.) Whoever you wind up selecting, however, the week following the end of the calling should be designated as:

XYZ COLLEGE

NEEDS ASSESSMENT

SUPERVISOR WEEK

(He or she will have earned it.)

PHASE III: ANALYSIS AND REPORTING

With a great sigh of relief, you realize ... *it's all over now!* The pressure is off, the responses are in, and you can finally sit back and contemplate your findings ... Well, not exactly. Because first you have to figure out what in the world you have in all those completed instruments and what it really means. Then you have to figure out what you're going to say about your results - and to whom. These are the final four steps in conducting an in-house needs assessment. You need to ask (and answer):

- What Did We Find Out?
- What Does It Mean?
- How Do We Report Our Findings?
- What Kind of Publicity Would Be Appropriate?

STEP 10: WHAT DID WE FIND OUT?

Inasmuch as the computer already entered the picture once, it will probably come as no surprise to you that it is back again. The reason? Because:

> Manually manipulating the mass of information generated by a needs assessment is a pain in the neck - and subject to a frightfully high error factor.

Consider, for example, a brief telephone interview of around eight minutes, such as that conducted by College of the Redwoods. A mere 38 questions. But that number of questions includes 108 response options, which, times 400 respondents, equals 43,200 pieces of information. (Not every respondent would be asked to answer every question, so this is a somewhat inflated figure. However, the principle remains the same.) Merely totalling the results by hand would be a monumental undertaking - and comparisons among items or subgroups would be out of the question. But put it into a computer and it takes little more than a few words and the press of a button to conduct any analysis your heart desires. [63]

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[63] Being able to put your results on computer does not mean you have to *have* a computer; this work can be contracted out. If you do have someone else do it, however, please give this section's suggestions careful consideration: correcting an error after the fact will be much more difficult than if you do the work yourself.

How do you achieve this miracle? The most important rule is:

PLAN AHEAD

Discuss the assignment with your data processing specialist or the head of your data processing department early on. If you don't, you're going to have one *very* surprised staff member on your hands when you ask him or her to "do something" with 400 completed surveys. Ask for suggestions, input and requests regarding the format and coding of the instrument *BEFORE* it's too late.[63] This is also the person who will know how it can be done, who can do it, how long it will take, and what the possible forms of the results are.

The manner in which you approach this task will depend in large part on the nature of your computer, on the programs available to you and on the creativity of your data processing staff. In most instances, however, the following general rules will make the key entry and analysis of your data proceed more smoothly:

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[64] One instrument which was actually tailored to the needs of data processing personnel is Allan Hancock College's (see the Technical Supplement). The response codes were transferred to the bottom of each page to make it easy for the data entry personnel to follow and to minimize errors. Apparently, this approach worked: there were only 7 invalid punches in the initial output.

- *STICK TO NUMERIC DATA.* Code every response with a number (for example, code male and female 1 and 2 rather than M and F). If you use ary open-ended questions, code the responses before you send them to data processing.

- *ASSIGN SOME CODE TO EVERY QUESTION ON EVERY INSTRUMENT.* Blanks on computer cards or tapes can give researchers - and some programs - fits. You might want to consider using standard codes such as the following for all questions

  0 = No Response
  8 = Other Response
  9 = Not Asked

- *DECIDE HOW YOU WANT TO ANALYZE EACH QUESTION BEFORE ANYTHING GETS INTO THE COMPUTER.* The way in which you want to look at a response will affect the way it might best be entered into the computer. For example, if you want to compare reasons for attending XYZ College, all possible reasons should be punched into one field or card column. (However, beware of multiple punches - most computer programs are not set up to handle them.) If, on the other hand, you want to view each reason in proportion to the total population, you'll want to have a separate column or field for each.

- *DON'T DUMP 400 COMPLETED SURVEYS ON THE DATA PROCESSING DEPARTMENT ALL AT ONCE UNLESS THEY REQUEST IT.* Check them for completeness as they come in, assign codes as necessary, and then forward them over to data processing on a daily basis.

- *ASK DATA PROCESSING TO DOUBLE-CHECK FOR INVALID PUNCHES AS THEY GO ALONG.* There is nothing more frustrating than staring at a 7 when the only possible responses are 0, 1 and 2, and realizing that you're going to have to locate and go back to the original instrument to find out what the answer really was.

- *TRY TO USE A "PACKAGE" TO ANALYZE YOUR RESULTS RATHER THAN RELYING ON IN-HOUSE PROGRAMMING EXPERTISE.* There are some highly skilled programmers in California's community colleges, but asking them to write a special program for your needs assessment is an unnecessary imposition. There are a number of excellent packages available, all of which can do more than you'll probably want. (The Project used the Statistical Analysis System, or SAS, with highly satisfactory results.) [65]

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[65] The Statistical Analysis System (SAS) is a computer system for data analysis which provides tools for information storage and retrieval, data modification and programming, report writing, statistical analysis and file handling. It runs on IBM 360/370 computers and plug-compatible machines such as Amdahl, Itel, CDC Omega, Magnuson and Ryad.

- *KEEP YOUR ANALYTICAL REQUIREMENTS SIMPLE.* Programming takes time and running a computer costs *money*. If you aren't going to use some highly complex and sophisticated analysis (and most people don't), don't ask for it.

- *BE PATIENT.* It takes time to put something new on a computer and get it to run. Plan to allow at least three weeks for data processing - and don't be surprised if you find the time extending to four or five.

Following these general rules (with whatever modifications are dictated by your particular computer and/or suggested by your data processing staff) should yield, in due course, a printout of your findings. The next step is to take a look at your printout and decide what to do with it.

STEP 11: WHAT DOES IT MEAN?

The more comfortable you are dealing with numbers, the more you are going to like this step - and the easier life will be for your data processing staff. Basically, the reason for this is that a computer only does what it is told. The more it has to do, the more it has to be told. And telling it can be a time-consuming, sometimes difficult and frequently tedious process.

Consider the question: "Have you ever attended any classes at XYZ College?" A "yes" response is coded 1, a "no" response is coded 2, and "no response" is assigned a 0. The question is number 5 on your instrument. In its simplest and easiest-to-produce version, your printout on this question will probably look something like this:[66]

Q5	FREQ	PERCENT	CUM FREQ	CUM PERCENT
1	185	46.25	185	46.25
2	210	52.50	395	98.75
0	5	1.25	400	100.00

What in the world does *that* mean?

[66]The examples in this section are based on SAS printouts. Other packages' printouts will look somewhat different, but the basic principles discussed in this section will remain the same.

What it means is that 46% of respondents have attended XYZ College, 53% have not and 1% did not answer the question. It can be read this way:

Q5	is the heading. It tells you that this is the answer to Question 5.
1, 2 & 0	are the response options. Referring back to your instrument, you can see that they mean yes, no and no response.
FREQ	means frequency. This represents the number of respondents who gave each response.
PERCENT	shows the percentage of all respondents who gave each response.
CUM FREQ	means cumulative frequency. It shows the sum of those who gave a particular response plus those who gave all previous responses.
CUM PERCENT	means cumulative percent. It shows the sum of the percentage of respondents who gave a particular response plus the percentage of respondents who gave all previous responses.

It takes a somewhat mathematical mind to look at pages and pages of this (roughly 15 pages for a 12-minute telephone interview survey) and not go slightly mad. If you are not the numerical sort, you might ask

data processing for the fancier version, which will look something like this:[67]

HAVE YOU EVER ATTENDED XYZ COLLEGE?

C5	FREQ	PERCENT	CUM FREQ	CUM PERCENT
YES	181	45.25	181	45.25
NO	214	53.50	395	98.75
NO RESPONSE	5	1.25	400	100.00

You still have to deal with FREQ, PERCENT and the like, but at least the subject is clear, and the responses have real words attached to them. (Note that you still don't have the full question printed out; most packages have a limit on the number of characters they will print. This calls for being *v e r-r-r-y careful* when you interpret what you have.)

What you have - in either the simple or fancy version - is a series of *DESCRIPTIVE STATISTICS*. That is, you have numbers which describe the responses given by those who answered your survey. You can either leave them as numbers, or translate them into words. In this case, for example, you could say either "45% of respondents have attended

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[67] If you do request the fancier version, please allow ample time: getting a computer to print labels on tables using some packages can be frightfully tedious. If available hours in data processing are at a premium, you might ask someone familiar with the less sophisticated version to assist you in deciphering it and then simply write or type the appropriate headings onto the printout.

XYZ College" or "close to half (45%) of respondents have attended XYZ College." The choice is yours; most survey reports use a combination of both depending on the nature of the response.

For most purposes, descriptive statistics should be sufficient. As a general recommendation: if your mathematical ability and knowledge of statistics are not substantial, stick to simple frequencies and percentages. This is not a research paper - it's an attempt to discover and understand the characteristics, preferences, perceptions and needs of the community for planning purposes.

If you are so inclined, however, needs assessment data can be subjected to a variety of statistical manipulations. These include testing for statistical significance of differences among respondent groups, various subgroup analyses and tests of association between responses. All of these are aspects of *INFERENTIAL STATISTICS* - the statistics which permit us to make inferences about the survey population on the basis of findings from a sample.

Assuming your sample is of sufficient size, that it was selected and implemented correctly and that you had an acceptable response rate, you are within the bounds of reason to treat it as being representative of the wider community. Inferential statistics permit you to go one step further and estimate the range of possible errors you incur in

applying sample findings to the population under consideration.[68]

This type of treatment of needs assessment data generally exceeds what is necessary and sufficient to understand and describe the results. However, the reader who is interested in exploring such analyses will find an excellent overview of inferential statistics in Babbie's Survey Research Methods. The mechanics of the various calculations can be found in any elementary statistics text.

Returning to the somewhat less stratospheric: there is one general rule you will want to bear in mind regardless of the types of statistics you utilize. And that is:

BE FAIR TO THE DATA

Both intentionally and unintentionally, it is exceedingly easy to be misleading in interpreting survey results; the old hierarchy of lies, damn lies and statistics continues to hold true more than most of us would care to believe. To avoid this, you need first to view each question in terms of its purpose, those of whom it was asked and the actual responses, and then to select the most accurate and precise approach to

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[68] Please note that the term "population under consideration" means the population from which you sampled. If you sampled from the telephone directory, it is inappropriate to make inferences about the entire community; your population is households with listed telephone numbers.

presenting the results.

An example from one of the Project participants' assessment illustrates the way in which unintentional misinterpretation can lead to some pretty discouraging conclusions. Suppose you ask the following series of questions:

1. Are you planning to attend XYZ College in the next 12 months?
2. IF YES: Do you believe you will need any type of counseling when you attend?

Assume the number 1 represents a "yes" response, 2 represents "no" and 0 represents either a "no response" or the fact that the question was not asked.

The third question in the sequence reads as follows:

3. IF YES: Would that be ... READ CATEGORIES

ACADEMIC COUNSELING 1
VOCATIONAL OR CAREER COUNSELING . . . 2
PERSONAL COUNSELING 3
DO NOT READ → OTHER _____ . . 4

Your printout looks like this:

Q1	FREQ	PERCENT	CUM FREQ	CUM PERCENT
0	21	5.25	21	5.25
1	125	31.25	146	36.50
2	254	63.50	400	100.00
Q2				
0	246	61.50	246	61.50
1	51	12.75	297	74.25
2	103	25.75	400	100.00
Q3				
0	351	87.75	351	87.75
1	10	2.50	361	90.25
2	30	7.50	391	97.75
3	9	2.25	400	100.00
4	0	--	--	--

What does this mean? On the surface, it means that 31% of respondents are planning to attend XYZ College in the next 12 months, 13% of respondents believe they will need counseling from XYZ College in the next 12 months, and 8% of respondents believe they will need vocational or career counseling from the college in that time period. Conclusion: there isn't much of a market for vocational or career counseling out there - less than 10%. Right?

Wrong. Because that's not what the purpose of the question was (or at least should have been). What you want to know is how many *OF THOSE WHO ARE PLANNING TO ATTEND* believe they will need counseling, and of what type? (In other words, who cares about those who aren't going to attend for the purposes of planning counseling services?) What you want to do, then, is look at those who need counseling as a percentage of those who are planning to attend, and those who need vocational or career counseling as a percentage of those who need counseling.

To be technical about it, you want to change the *BASE* for your calculations: first from all respondents to potential students; and then from potential students to those who believe they will need some type of counseling. To save data processing time, this can be done quite readily by hand - an approach which also gives you the flexibility to try several different manipulations in a short period of time. To wit:

	NUMBER	PERCENT [69]
THOSE PLANNING TO ATTEND (Base = 400)	125	31.25
NEED FOR COUNSELING AMONG THOSE PLANNING TO ATTEND (Base = 125)	51	40.80
NEED FOR VARIOUS TYPES OF COUNSELING AMONG THOSE PLANNING TO ATTEND (Base = 125)		
Academic	10	8.00
Vocational/Career	30	24.00
Personal	9	7.20
None/No Response	76	60.80
NEED FOR VARIOUS TYPES OF COUNSELING AMONG THOSE NEEDING COUNSELING (Base = 51)		
Academic	10	19.61
Vocational/Career	30	58.82
Personal	9	17.65
No Response	2	3.92

Quite a miraculous increase in the market for vocational and career counseling! From under 10% (of the population) to over half (of potential students need counseling).

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[69] A percentage can be calculated by dividing the number of a given response by the base and multiplying by 100: PERCENT = NUMBER OF RESPONSES ÷ BASE X 100. For example: 125 respondents (number of responses) out of a total of 400 (base) said they were planning to attend XYZ College. PERCENT = 125 ÷ 400 X 100 = 31.25%.

One final note: observe the two possible formulations of the "Need for Various Types of Counseling" and the major differences in the resulting percentages. Which formulation you use will depend on the issue which concerns you: do you want to know the level of possible demand for various types of counseling among all potential students, or only among those who believe they will need it and are therefore the most likely to seek it if they do in fact attend? This distinction is made to illustrate one final point: in manipulating survey data in this manner, it is essential to specify, both verbally and numerically, the base upon which your calculations are being made. This affords the reader the same opportunity you have had to understand the true meaning of the responses.

In summary, then: regardless of the mathematics or statistics you use, be fair to the data in terms of the purpose of the question, those of whom it was asked and the actual responses. Having done so, however, be sure you communicate what you did to your reader. Otherwise, the interpretations may wind up being worse than they would have been had you let the original numbers stand. (If you don't believe this, consider the next day's headline: XYZ COLLEGE FINDS OVER HALF THE COMMUNITY NEEDS CAREER COUNSELING!)

STEP 12: HOW DO WE REPORT OUR FINDINGS?

Researchers are frightfully fond of lengthy documents full of tables, charts, calculations and every detail one could possibly want to have explained about a particular study. The problem is that almost nobody ever reads them except other researchers. And if the statement of purpose for your assessment contains even so much as a suggestion that some action may be taken as a result, it should be fairly obvious that your target audience should be administrators and members of the Board, not the research community.

Besides being busy and already overburdened with reading matter, administrators and Board members typically have limited patience with peripheral details. Basically, they will want to know:

- What of importance did we find out?
- What does it mean? (And/or: How does it relate to other people's findings?)
- How should we pursue it further?

A readable (and read) report, then, will:

- Highlight the salient or key findings
- Point to selected high-interest details
- Outline any major differences between your findings and those of others

- Briefly summarize the other findings[70]
- Indicate areas which merit further exploration or investigation

Figure III-9 on page 229 represents the first page of a detailed tabulation and preliminary analysis of one of the Project participants' assessments. This is a compact presentation, relatively devoid of verbiage. Were it to be written up in report form, however, it would probably consume three or four pages. Participating districts' surveys generated an average of 15 data pages such as the one depicted in this figure. Fifteen pages of data times three pages of text each equals (at a minimum) a 45-page report. Too long - and far too detailed. This is information *YOU* will need to have for backup and for review by those who are interested in details - not information which your target audience should have to decipher.

Figure III-10 on page 230 represents an example of how the findings displayed in Figure III-9 might be summarized and the key elements highlighted. Note that this summary consists of 11 simple and readily understood sentences yet includes comparisons to statewide findings and commits no sins of

[70] A report which omits selected findings as being of little or no interest is justifiably subject to the criticism of selective or biased reporting. However briefly, all of the survey results should at least be summarized, particularly in any written presentation.

FIGURE III - 10

CUESTA COLLEGE NEEDS ASSESSMENT RESULTS

- ALMOST NINE OUT OF TEN RESPONDENTS (89.7%) NAMED CUESTA COLLEGE AS THE COMMUNITY COLLEGE IN THEIR AREA.
  - *The comparable statewide figure is 82.2%.*
  - *Only one respondent said he or she had never heard of Cuesta College.*
- CLOSE TO A THIRD OF RESPONDENTS (30.7%) HAVE ATTENDED A CLASS AT CUESTA, AND SLIGHTLY OVER A THIRD (36.5%) HAVE TAKEN PART IN SOME OTHER ACTIVITY AT THE COLLEGE.
- ONE IN TEN RESPONDENTS ARE CURRENTLY ENROLLED IN A COURSE AT A COMMUNITY COLLEGE. OF THESE, OVER FOUR-FIFTHS (85.0%) ARE ENROLLED AT CUESTA. THIS REPRESENTS 8.6% OF ALL RESPONDENTS.
  - *Statewide, 8.2% of respondents are enrolled in one of California's community colleges.*
- THE MOST FREQUENTLY MENTIONED REASON FOR TAKING COURSES AT CUESTA WAS TO GET A DEGREE OR CERTIFICATE (41.0% OF CURRENT AND FORMER ENROLLEES). OTHER FREQUENTLY MENTIONED REASONS WERE FOR PERSONAL IMPROVEMENT OR ENRICHMENT (37.7%) AND TO PREPARE FOR WORK (33.9%).
  - *Statewide, the most frequently mentioned reason was for personal improvement or enrichment (43.6%), followed by to prepare for work (31.4%) and to get a degree or certificate (29.1%).*

omission. In addition, the important items are accentuated.[71]

You will note that Figure III-10 represents a relatively "dry" presentation - i.e., it contains no evaluative or judgmental statements, but rather sticks to a description of the data. This is a typical research approach - straightforward and numerical, with no attempt made to find "meaning" in the numbers. When you make a report to the administration or the Board, however, you will undoubtedly be asked to say what the results mean. Let us take a look at two possible approaches to discovering meaning in needs assessment results.

If you have mastered elementary statistics, the question "But what does it *MEAN*?" should pose no problem for you. Suppose, for example, that 95.6% of respondents named your community college, while the statewide figure was 82.2%. Taking sample sizes and tolerances into consideration, a quick calculation will enable you to assert:

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[71] Obviously, "importance" is a matter of judgment. In determining what an important finding is, however, you may want to consider the following: what intrigues or particularly interests you; what your audience is likely to consider important or interesting; what makes you look particularly good; what makes you look noticeably bad; what others who have seen the preliminary results have commented upon; what appears to be substantially different from the results of others - i.e. what makes you unique; and what appears to be the same as the results of others - i.e., what puts you at or about the norm.

> Significantly more respondents of the XYZ Community College District are aware that ours is the local community college than respondents statewide.

Which, for the sake of clarity in communication, you can legitimately translate into:

> Awareness of XYZ College is significantly greater than statewide awareness of local community colleges.

Suppose, however, that statistics is far from your strong suit. You would nevertheless be well within the bounds of reason to assert:

> Better than nine in ten respondents named XYZ College as the local community college. This compares favorably with a statewide figure of 82.2%.

Caution precludes you from stating "we're doing better" because you can't substantiate that contention statistically. Honesty tells you, however, that your result is in a favorable neighborhood relative to the statewide finding.

There is another type of "editorializing absent statistics" which occasionally appears in survey reports and merits some discussion here. Perhaps the best way to characterize it is the "I don't (or do) like this" method. Used cautiously and clearly labelled as such, there is nothing inherently wrong with this approach. All too frequently, however, it appears without caveats - which is generally bad practice and usually misleading. Consider the following (true) example:

FINDING: 21.0% of current and former enrollees have received counseling from the college.

REACTION: That figure is *FAR* too low. Our counselors ought to be reaching a *MUCH* larger percentage of students.[72]

STATEMENT: Survey responses show that the counselors are only reaching one student in five. This situation merits immediate attention.

[72]Actually, the typical reaction (and the reaction which actually occurred at the session during which this finding was presented) is: "That's impossible! Our counselors are reaching a far greater proportion of our students. Obviously, you just didn't survey the right students. Or enough students, for that matter." For the sake of argument, however, we will assume that the "don't like it" person elects to deal with the issue rather than with the methodology.

There are a number of limitations which this example fails to include - limitations which, if included, might prevent an incompletely-thought-through rush to "immediate attention." To wit:

- It ignores sampling tolerances. At plus or minus 5%, the figure could be closer to one in four.
- It ignores confidence specifications. At 95% confidence, there is a 5% chance that this finding was the result of a bad sample.
- It overlooks the distinctions between full- and part-time students and between those who attended "for fun" as opposed to those who attended for primarily academic or occupational reasons.
- *MOST IMPORTANTLY:* It fails to make clear the fact that it is an interpretation based on an opinion - the reactor's opinion that counselors "ought" to be reaching more than a fifth of all students. As such, it represents a major departure from the survey findings.

A more appropriate and accurate message could be conveyed as follows:

> Survey responses show that roughly one in five current or former enrollees have received counseling from XYZ College. Precluding a bad sample, sampling tolerances suggest that the true figure lies somewhere between 16.5% and 26.5% (inclusive).
>
> Given XYZ College's philosophy, even the higher of these figures suggests a possible cause for concern. However, both full- and part-time students were surveyed. We plan to take a more detailed look at the responses of full-time students to determine if further investigation or action appears warranted.

Too much verbiage - this sort of explication is best made orally, either in response to questions or when selected responses are being examined more carefully. However, the message should be clear. To the extent that you editorialize, be sure that the underlying opinions are explicit and that all the limitations of the supporting data are clear.

If you are making a verbal report on your results, it is frequently helpful (and almost always attention-holding) to back up your remarks with selected graphics. Transparencies are a relatively standard way of doing this, although wall charts are perhaps more effective (particularly if

you have someone on board who is creative in the use of color). Figure III - 11 on pages 237 and 238 presents tabulations which are particular amenable to graphic presentation; the resulting chart is depicted in Figure III - 12 on page 239.

Figure III - 12 is a fairly nontraditional approach to graphics; more typical in depicting numerical data are bar graphs and pie charts. Providing you stick to the data, however, Project experience suggests: the more creative the better. Unique or unusual formulations (assuming they are clear) are almost immediately captivating and tend to command most thoughtful attention than the "old standbys." Someone in your graphics department ought to be most helpful in this regard.

How much graphic material you include in a written report will probably depend on your judgment about the extent to which the sheer apparent volume of your product will intimidate the potential reader. Figures are perhaps the clearest method of conveying the meaning of numbers - but they are also the most paper-consuming. In short: do use pictures and use them creatively, but be selective when it comes to publishing them if you want to ensure that your report is picked up and read.

One final note on reporting: having conveyed your findings to the reader or listener, you must also inform that person as to how the findings were obtained. However brief, every report on survey findings should include some statement of *METHODOLOGY*.

FIGURE III - 9
CUESTA COLLEGE NEEDS ASSESSMENT TABULATION OF RESPONSES

OTHRCOUN	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	(NO RESPONSES)
.	397	.	.	.	

- Approaching half of those interviewed (44.8%) have thought about taking a course at Cuesta. (This represents 65.2% of those who said they have never taken a course.)

THTCORS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	THOUGHT ABOUT TAKING A COURSE AT CUESTA?
0	219	219	55.164	55.164	No Response; No
1	178	397	44.836	100.000	Yes

- Close to half of those interviewed (46.1%) have thought about participating in some other activity at Cuesta. (This represents 73.8% of those who have never attended a Cuesta activity.)
(SEE ALSO SUPPLEMENTAL RUN)

THIACT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	THOUGHT ABOUT PARTICIPATING IN SOME OTHER ACTIVITY AT CUESTA?
0	214	214	53.904	53.904	No; No Response
2	183	397	46.096	100.000	Yes

THIWORK	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	
.	350	.	.	.	
1	47	47	100.000	100.000	Thought about taking a course to prepare for work = 26.4% of thinkers.

THTDEG	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	
.	371	.	.	.	
2	26	26	100.000	100.000	Thought about taking a course to get a degree = 14.6% of thinkers.

- The majority of those who thought about taking a course at Cuesta (58.4%) thought about doing so for personal improvement or enrichment.

THTSKILS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	
.	390	.	.	.	
3	7	7	100.000	100.000	Thought about taking a course to improve basic skills = 3.9% of thinkers.

THTPERIM	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	
.	293	.	.	.	
4	104	104	100.000	100.000	Thought about taking a course for personal improvement or enrichment = 58.4% of thinkers.

THTOTHER	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	(NO RESPONSES)
.	397	.	.	.	

- Rank order of activities of greatest interest (among those who have thought about participating but have not):

  1. Performing Arts
  2. Short Courses/Workshops
  3. Well Known Speakers
  4. Consumer Programs
  5. Special Events

ACTINTER	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	ACTIVITY OF GREATEST INTEREST
.	208	.	.	.	
1	71	71	37.566	37.566	Performing Arts
2	24	95	12.698	50.265	Speakers
3	53	148	28.042	78.307	Short Courses/Workshops
4	22	170	11.640	89.947	Consumer Programs
5	19	189	10.053	100.000	Special Events

WORKIMP	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	IMPORTANCE OF TRAINING FOR JOBS
0	11	11	2.771	2.771	No Opinion
1	4	15	1.008	3.778	Not at all Important
2	7	22	1.765	5.542	Not Too Important
3	50	72	12.594	18.136	Somewhat Important
4	319	391	80.353	98.489	Very Important
9	6	397	1.511	100.000	No Response

FIGURE III - 11

Over half of respondents (59.4%) are employed.

EMPLOYED	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	EMPLOYED?
0	1	1	0.317	0.317	No Response
1	187	188	59.365	59.683	Yes
2	127	315	40.317	100.000	No

Among those who are employed, somewhat over three-quarters (77.0%) are employed full-time.

FTORPART	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	EMPLOYED FULL-TIME OR PART-TIME?
0	128	128	40.635	40.635	No Response
1	144	272	45.714	86.349	Full-Time=77.0% of Employed
2	43	315	13.651	100.000	Part-Time=23.0% of Employed

Among Those Employed Part-Time: *

- Close to half (46.5%) are primarily homemakers.
- Almost half (48.8%) plan to stay in the same kind of job, while slightly over half (55.6%) believe they will need additional training or instruction to do so **
- One in five (20.9%) are seeking full-time work.

PRIMHOME	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	IF PART-TIME: PRIMARILY HOMEMAKER?
0	272	272	86.349	86.349	No Response
1	20	292	6.349	92.698	Yes=46.5 % of part-time workers
2	21	313	6.667	99.365	No
3	2	315	0.635	100.000	Qualified

PTPLANS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	PART-TIME WORKERS: FUTURE INTENTIONS?
0	270	270	85.714	85.714	No Response
1	21	291	6.667	92.381	Stay in Same Kind of Job=48.8% of Part-Timers
2	13	304	4.127	96.508	Move Up=30.2% of Part-Timers
3	11	315	3.492	100.000	Change Kind of Work=25.6% of Part-Timers

* (Stay in Same Kind of Job=48.8% of Part-Timers; Move Up=30.2% of Part-Timers; Change Kind of Work=25.6% of Part-Timers)

Of those who are seeking full-time employment, over half (55.6%) believe they will need additional training or instruction to do so.**
This represents 1.6% of [illegible] respondents.

CURRSEX	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	PART-TIME WORKERS: MOST IN OCCUPATION WOMEN OR MEN?
0	270	270	85.714	85.714	No Response
1	24	294	7.619	93.333	Most Women
2	14	308	4.444	97.778	Most Men
3	7	315	2.222	100.000	Don't Know/Not Sure

PTSEEKFT	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	PART-TIME WORKERS: SEEKING FULL-TIME?
0	271	271	86.032	86.032	No Response
1	9	280	2.857	88.889	Yes=20.9% of Part-Timers
2	32	312	10.159	99.048	No
3	3	315	0.952	100.000	Plan to Stop Work Soon

PINDINST	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	PART-TIME WORKERS SEEKING FULL-TIME: NEED ADDITIONAL TRAINING/INSTRUCTION?
0	303	303	96.190	96.190	No Response
1	5	308	1.587	97.778	Yes=55 6% of those Seeking Full-Time Work
2	7	315	2.222	100.000	No=77.8% of those Seeking Full-Time Work

* (Yes=55 6% of those Seeking Full-Time Work; No=77.8% of those Seeking Full-Time Work)

* Base=all part-time workers=43.

** Please interpret these data with caution. Figures add to > 100%.

* Figures add to >100%. Suspect questionning or key entry error.

Approaching half of those employed full-time (44.5%) plan either to move up to a more advanced postion or job (28.5%) or to change the type of work they do altogether (16.0%).

EMPPLANS	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	FULL-TIME EMPLOYED: FUTURE PLANS?
0	171	171	54.286	54.286	No Response
1	80	251	25.397	79.683	Stay in Same Kind of Job=55.6% of Full-Time
2	41	292	13.016	92.698	Move Up=28.5% of Full-Timers
3	23	315	7.302	100.000	Change type of work=16.0% of Full-Timers

(SEE SUPPLEMENTAL RUN)

MOSTWORK	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	EMPLOYED MOVING OR CHANGING: CURRENT JOB MOST WOMEN OR MEN?
0	249	249	79.048	79.048	No Response
1	20	269	6.349	85.397	Most Women
2	31	300	9.841	95.238	Most Men
3	15	315	4.762	100.000	About Even

MOVESEX	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	EMPLOYED MOVING OR CHANGING: JOB MOVING TO MOST WOMEN OR MEN?
0	251	251	79.683	79.683	No Response
1	10	261	3.175	82.857	Most Women
2	40	301		95.556	Most Men
3	10	311	3.175	98.730	About Even
4	4	315	1.270	100.000	Don't Know/Not Sure

Of the full-time employed who are planning to move up or change, over three-quarters (76.6%) believe they will need additional training or instruction in order to do so.

EMNDINST	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	EMPLOYED MOVING OR CHANGING: NEED ADDITIONAL TRAINING /INSTRUCTION?
0	250	250	79.365	79.365	No Response
1	49	299	15.556	94.921	Yes=76.6% of Those Moving/Changing
2	16	315	5.079	100.000	No=25.0% of Those Moving/Changing

Among those who are not employed, 12.6% are seeking employment. None of these are doing so because they have to as a result of dissolution of marriage, although one individual (6.3% of employment-seekers) gave a qualified response.

SEEKEMPL	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	NOT EMPLOYED: SEEKING EMPLOYMENT?
0	190	190	60.317	60.317	No Response
1	16	206	5.079	65.397	Yes=12.6% of Not Employed
2	109	315	34.603	100.000	No=85.8% of Not Employed

NEEDJOB	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	IF SEEKING: HAVE TO BECAUSE OF DISSOLUTION OF MARRIAGE?
0	299	299	94.921	94.921	No Response
2	15	314	4.762	99.683	No=93.8% of Seekers
3	1	315	0.317	100.000	Qualified=6.3% of Seekers

Of those who are seeking work, almost a third (31.3%) were previously solely homemakers.

ONLYHOME	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	IF SEEKING: PREVIOUSLY ONLY HOMEMAKERS?
0	299	299	94.921	94.921	No Response
1	5	304	1.587	96.508	Yes=31.3% of Seekers
2	11	315	3.492	100.000	No=68.8% of Seekers

(SEE SUPPLEMENTAL RUN)

SEEKMOST	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	IF JOB SEEKING: MOST WOMEN OR MEN?
0	299	299	94.921	94.921	No Response
1	6	305	1.905	96.825	Most Women
2	3	308	0.952	97.778	Most Men
3	5	313	1.587	99.365	About Even
4	2	315	0.635	100.000	Don't Know/Not Sure

Somewhat under half of those not employed and seeking employment (43.8%) believe they will need additional training or instruction in order to obtain employment. This represents 2.2% of all respondents.

UNNDINST	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	SEEKING EMPLOYMENT: NEED ADDITIONAL TRAINING OR INSTRUCTION TO OBTAIN?
0	299	299	94.921	94.921	No Response
1	7	306	2.222	97.143	Yes=43.8% of Seekers
2	9	315	2.857	100.000	No=56.3% of Seekers

Somewhat under half of those in need of additional training or instruction (45.9%) believe Columbia College would be a good place to get it. This represents 8.9% of all respondents. Another 13.1% of those in need are not sure.

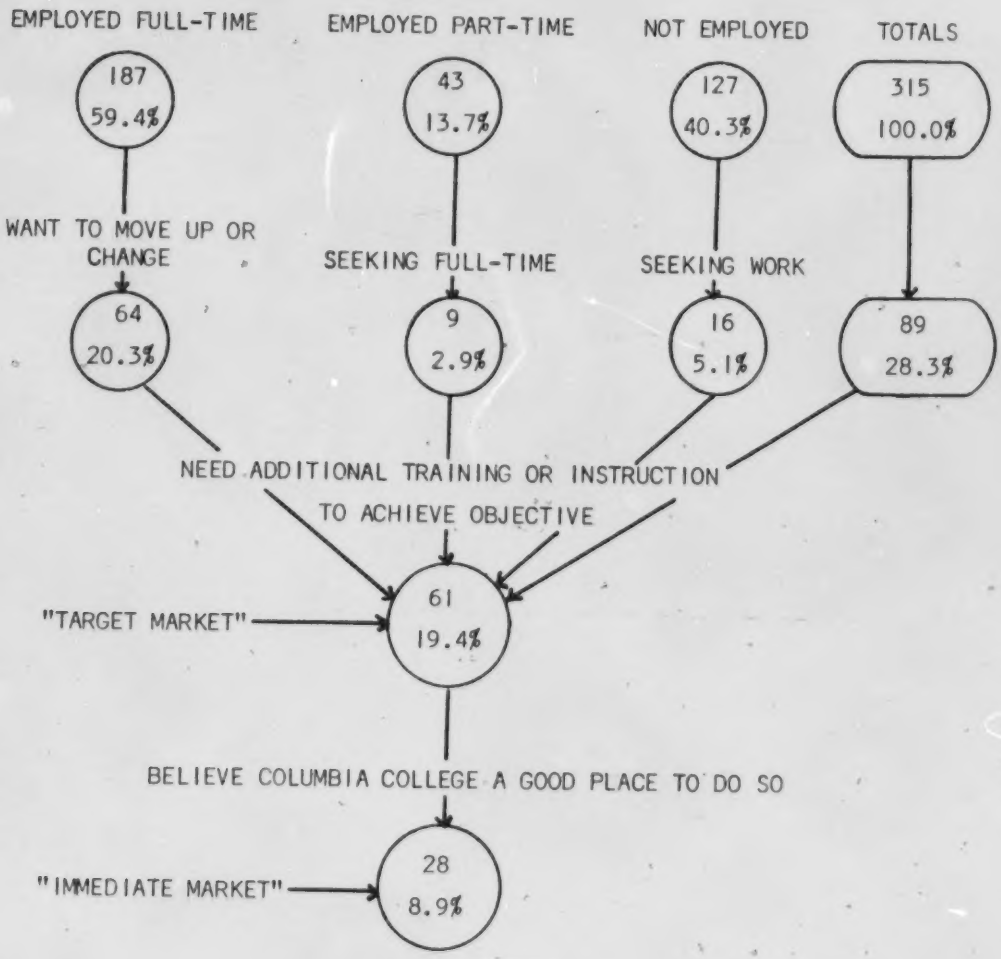
COLCOLGD	FREQUENCY	CUM FREQ	PERCENT	CUM PERCENT	COLUMBIA COLLEGE GOOD PLACE TO GO?
0	255	255	80.952	80.952	No Response
1	28	283	8.889	89.841	Yes=45.9% of Those in Need
2	24	307	7.619	97.460	No=39.3% of Those in Need
3	8	315	2.540	100.000	Don't Know/Not Sure=13.1% of Those in Need

FIGURE III - 12

COLUMBIA COLLEGE

SUMMARY OF EMPLOYMENT AND OCCUPATIONAL EDUCATION RESPONSES

(Percentages of Total Sample = 315)



At a minimum, you will need to report:

- How many responses your findings are based on
- How respondents were selected
- How responses were obtained

In addition, you should be prepared to discuss: [73]

- The instrument design process
- The sample selection process and total sample size
- The tolerance and confidence specifications for the resulting sample
- The percentage of potential respondents who refused or were never contacted
- The extent to which key demographics in the sample agree with population parameters [74]
- The selection, training and supervision of interviewers

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[73] Being prepared on these topics will save you considerable grief in the event someone is displeased with your findings, for it is almost axiomatic that people who disagree with survey findings will attack the methodology rather than the offending outcome.

[74] To the extent that sample demographics match population demographics, the sample can be said to be representative of the population and free of apparent bias. A table for determining the degree of match necessary to assert that the response is demographically unbiased given various sample sizes and response rates can be found in the SAM Operations Manual (1978), p. 90.

- The manner in which the results were processed and analyzed

In sum, a needs assessment report which is likely to be read (and/or paid attention to):

- Is short and succinct
- Highlights key findings
- Briefly summarizes all other findings
- Includes any significant or noteworthy comparisons with other assessments
- Indicates areas which merit further explanation or investigation
- Is accompanied by clarifying graphics (particularly in the case of a verbal report)
- Informs the reader or listener as to how the results were obtained

STEP 13: WHAT KIND OF PUBLICITY WOULD BE APPROPRIATE?

What kind of publicity would be appropriate? Almost any kind, and as much as you want - *AFTER* the results are in. *Please don't publicize the survey in advance.*[75] If you do, scenarios such as the following may result:

> John and Jane Doe are watching television when a commercial comes on urging people to respond to the XYZ Community College survey if they are called. Neither of them ever having heard of XYZ, they look at each other, shrug their shoulders and think no more about it.
>
> The following afternoon, Jane encounters neighbor Suzie Roe - and suddenly she remembers that the Roe's daughter is attending college. Conversationally, she inquires, "I heard a commercial last night about an XYZ College survey or something like that. Is that where Sandy goes?"
>
> "That's where she *WENT* - for one semester. What an *AWFUL* place. Do you know, she got her first C there - and no one was even willing to help her understand the work??" Jane sympathizes, and again thinks little more about it.

[75] Advance notice or publicity is frequently used in mail surveys in an attempt to increase the response rate to an acceptable level. However, response rates to telephone and door-to-door surveys are significantly high to make this tactic unnecessary.

Two hours later, the phone rings, and Jane is greeted with, "Hello, my name is _____ from the local community college district. We are conducting a survey ...." Impressed with the timing of new knowledge, Jane consents to the interview.

INTERVIEWER: First, do you happen to know the name of the community college in your area?

JANE: I sure do! It's XYZ College.

INTERVIEWER: How would you evaluate the qualify of instruction at XYZ College?

JANE: Pretty darned poor, I'd say!

And so on .... XYZ College now has Respondent A's "opinions" - which are actually non-Respondent B's second-hand impressions of an institution in which not even she, but her daughter, had trouble. Hardly an unbiased response.

Needless to say, you will need to inform your Board about the assessment in advance, even if you do not require its approval. If nothing else, this will prevent some mighty surprised inquiries as constituents call their representatives to check on the legitimacy or objectives of the survey. You will also want to inform your switchboard and any other party people might telephone directly to ask about the call they received. The fewer people who are likely to broadcast this information, however, and the less "newsworthy" it is, the better.

A second caution involves publicizing your findings before all of the responses are compiled, checked and thoroughly analyzed. If you appear to be coming up with an exciting finding or two, there may be a temptation on the part of some to "go public" before the results are firmly established. If you do this before all the calls are completed, you run a major risk of biasing the remaining interviews. And if you do it before everything has been compiled and double-checked, you run the risk of winding up with face a'la egg when you have to admit that what you initially reported was in error.

Your own style, the style of your public information officer and your district's preferences will undoubtedly determine the nature of whatever press release you issue. From a research point of view, however, you will also need to consider the following:

- All salient findings should be reported, including those which seemingly cast the institution in a negative light. Selective reporting is a no-no.
- There are ways of toning down negative results, but they cannot be stretched too far. A 40% "poor" response may be "less than half," but it is certainly not "well under half." Nor is 60% the "vast majority."
- In the long run, a balanced portrait will probably be more favorably received than one which makes the institution look unassailed and unassailable. A needs assessment is, after all, a working tool for your administration and Board. If you toot your own

horn to excess (particularly at the expense of the data), people will legitimately want to know why you bothered in the first place.

All this having been said, a needs assessment can get quite a bit of good public relations mileage - and there is no reason why it should not be used in this manner as well. Sample headlines following the statewide survey included:

CALIFORNIA COMMUNITY COLLEGES ARE WELL-KNOWN AND POPULAR

COMMUNITY COLLEGES HAVE FAVORABLE IMAGE
STATEWIDE SURVEY FINDS

SURVEY SHOWS: CALIFORNIANS LIKE COMMUNITY COLLEGES

POLL SHOWS PUBLIC AWARE OF JUNIOR COLLEGE COURSES

In sum: mum's the word until the assessment is done, but once the last analysis has been double-checked ... run with it, and may all of your hard work be rewarded on Page 1. Finally, one last note while we are on the subject of rewards: don't forget to credit the hard work of those to whom you are indebted for all of your newsworthy findings, including your dedicated interviewers and exhausted supervisor.

IV. CONTRACTING WITH AN OUTSIDE ORGANIZATION

The advantage of having an outside organization conduct your needs assessment is that you don't have to do any work, right? Well ... not exactly. In fact, the pre-planning and homework you do in preparation for inviting an outsider in may even be more important in the long run than the preliminary work you do on an in-house assessment. There is nothing "magic" about survey research: professional organizations and individuals can conduct surveys just as worthless as those done by careless educational institutions. In short: let the buyer be prepared, and let the buyer beware.

EVERYTHING HAS A PRICE TAG

The reader who was curious about how one might mount an in-house needs assessment and read Chapter III will doubtless realize by now that virtually every aspect of a needs assessment has a cost associated with it - whether that cost be measured in terms of financial or human resources. Research firms being what they are - profit-making organizations for the most part - all of the costs wind up having dollar signs in front of them. In general, the figures following these dollar signs will vary depending on three variables over which you can exercise a certain degree of control:

- The amount of work you do
- The scope of your assessment
- The level of sophistication you desire

Basically, the costs of a contracted needs assessment fall into five phases:

- Design
- Sampling
- Interviewing
- Data Processing
- Analysis and Report Writing

Let us examine each of these phases in terms of the three aspects of an external assessment which you can more or less control.

DESIGN

A considerable amount of the cost involved in conducting a needs assessment is incurred in designing the instrument to be used. This phase includes developing (or selecting) questions to meet your goals and objectives, structuring these questions into a draft survey instrument, pretesting the draft and then preparing the final version. At the low end of the cost spectrum, you can simply ask a professional firm to use an already developed and tested instrument which you have "lifted" from another college or district. (The Technical Supplement

contains several examples which you are welcome to use.) At the high end, you can present the organization with your goals and objectives and let them design an instrument from scratch.[1]

It is probable that most districts and colleges will find themselves somewhere in the middle of this spectrum, starting with an established and tested framework but wanting to add something here, delete something there and change a bit throughout. In this situation, the following guidelines will help you keep your costs to a minimum:

- Decide exactly what you want to change, and why, before you present your design to an outside organization.
- Bear in mind that the more you change, the greater the chances will be that an outside organization will suggest revisions. (This applies almost equally to changes made by professionals and novices; recall

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[1] Most firms will also implement an untested and even poorly designed assessment if you insist. This approach is hardly cost-effective, however: the results may be worthless. If you use anything other than a tested instrument, you will be wise to make provision in the contract for the organization to review it and suggest revisions and/or modifications.

Regardless of how much of the design work you do yourself, moreover, you will probably find it beneficial to provide the firm with the written goals and objectives for your assessment. Their review will usually be more valuable if they can evaluate your questions in terms of their intent.

that twenty different research experts can be expected to design twenty different instruments on the same topic.)

- Make as many of the revisions yourself as you can.
- Try to find someone with a background in or knowledge of survey research to review your work and suggest needed modifications with respect to wording, flow and the like.

Having done all this work, however (and it can be time-consuming), be prepared to be humble when you submit your masterpiece. The staffs of professional firms spend all day designing and implementing surveys, and they know what will work and what won't. If they suggest additional revisions, you will be wise to heed their advice.

In sum, the design phase of an assessment is one in which you can control the cost by the amount of work you do (and/or the amount of someone else's work you are willing to use). The more you do or "borrow," the lower the cost.

SAMPLING

The selection of the sample for your needs assessment is one of two phases over which you will probably have the least control when contracting with an outside organization. Although one of the services

such an organization can provide is assistance in determining the most cost-effective approach for your particular goals and objectives, each firm has its own preferred approaches and techniques, and it is on those techniques that it bases its assurances of sample validity. In this area, then, your primary role will probably be that of a provider of information regarding your resources and needs.

You will probably find that most established firms will recommend that your assessment be conducted by telephone. As discussed in Chapter II, there are three basic reasons for this: telephoning is the most cost-effective survey research technique; more control can be exercised over telephone interviews than personal interviews; and responses can be more readily obtained from a telephone sample than from a mail sample. The remaining comments in this section will therefore deal with the selection of a telephone interview sample.

Some professional firms continue to use telephone directories to develop samples. The Gallup Organization, for example, uses telephone directories in selecting the sample for its Hispanic omnibus service.[2] Increasingly, however, professional research organizations are turning to random digit dialing. If this is the case in the organization you contract with, you will both decrease your costs and increase the accuracy of the sample if you provide the firm with a list of the exchanges included in your service area.

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[2]The Gallup Organization, "Hispanic American Consumer Omnibus" (n.d.; Received August, 1979).

The primary reason for this is that neither telephone exchanges nor community college service areas follow standard geopolitical boundaries (e.g., city or county lines). It is therefore virtually impossible for a person not intimately familiar with your service area to determine what exchanges should be included and which should not. So it will be up to you to determine from the telephone company and/or your own knowledge of the area which exchanges you need to cover. This presumes, of course, that you can actually identify the exchanges in your service area with precision. You may find that some overlap with another college or district, in which case you will have to decide whether or not to include them (probably on the basis of whether they are mostly in your service area or in someone else's). If you include such exchanges and wind up with a few interviews in another district, they can always be thrown out before the results are analyzed.

Finally, although most organizations which offer random digit dialing already have the necessary information regarding the frequency of assignment of the prefixes they call, some do not. Yours may also be an area which the firm does not typically call, in which case their information may be either marginal or out-of-date. In situations such as these, you can decrease your costs by obtaining assessment frequencies from the telephone company. The work you do in the sampling area, in short, will not only keep your costs down, but will also help to ensure the validity of your sample.

INTERVIEWING

Because most professional organizations will probably recommend that your assessment be conducted by telephone, this section will consider the costs associated with telephone interviewing. Interviewing is unquestionably one of the most significant factors in the cost of any telephone needs assessment. There are two components of this cost: interviewers' time, and telephone toll charges. Unless the firm you select is local and you have a compact service area (which really only applies to certain parts of major metroplitan areas), you will incur costs on both counts.

Each of these components is affected by:

- The number and length of the questions in your instrument
- The number of completed interviews you desire
- The level of effort you want expended to reach each household in the sample

In addition, your costs in this regard will be affected by:

- Whether you want bilingual interviewing capability
- Your distance from the firm which conducts the assessment

Let us consider each of these items separately.

Clearly, the longer your instrument, the longer the interview - and the higher the cost in terms of interviewers' time and toll charges for non-local calls. Therefore, the more concise and compact you can keep your design, the less the assessment will cost you.

A recent (Spring 1980) estimate of the cost to conduct 400 eight-minute interviews submitted by an established professional organization included a cost increment of $150 plus related toll charges for *EACH ADDITIONAL QUESTION*.[4] Four hundred twelve-minute interviews (the length of the statewide survey) would therefore cost somewhere in the neighborhood of $3,000 more than the same number of eight-minute interviews. These figures alone suggest that the ruthless elimination of "nice to know" items and a strict adherence to your goals and objectives are virtual necessities in instrument design.

The second consideration in limiting interviewing costs is the number of completed interviews you desire. Throughout this Handbook, the figure of 400 has been used as a more or less absolute standard for planning purposes. In practice, 300 interviews are sufficient for many

[4]These figures are quoted for comparison purposes only; they will undoubtedly have increased in an absolute sense with the passage of time and can vary considerably from firm to firm.

purposes - particularly if your goal is to obtain a general sense of the community's perceptions rather than to develop hard planning data. (Three hundred completed interviews have a tolerance specification of ± 5.8% at the 95% confidence level.) If you want to ask more questions on a given budget, then, you might want to consider requiring a smaller number of completed interviews.

A third consideration which will affect both the cost for interviews and telephone toll charges (albeit to a lesser extent) is the level of effort you ask the firm to expend in attempting to reach each household in the sample. That is: how many times should they call each number before they give up on finding an adult at home? This is commonly referred to as the number of *CALL-BACKS* or *CALL-BACK ATTEMPTS*.

In general, the "standard" in survey research is to call each number in the sample up to four times. This is far from being an absolute standard, however. The Gallup Organization maintains that a fourth call is not cost effective, and cites the following data derived from ten omnibus surveys as evidence:[5]

[5]Letter to the Project from The Gallup Organization, May 1980.

	PERCENT OF INTERVIEWS COMPLETED
FIRST CALL	68.1%
SECOND CALL	20.4
THIRD CALL	8.6
FOURTH CALL	3.1

Because they found that they completed a relatively small proportion of all interviews on the fourth call, Gallup changed to a three-call design for their omnibus survey. Blankenship cites parallel evidence from two nationwide studies conducted by the National Data Group. This firm achieved the following completion rates on successive calls to 15,718 random digit listings:

ATTEMPT 1	ATTEMPT 2	ATTEMPT 3
35.2%	56.3%	67.6%

Blankenship then uses data from another organization to estimate that the completion rate on the fourth attempt would be around 71%.[6]

Clearly, the higher the response rate, the more reliable the survey findings. However, for many purposes an increase of a few percentage points (less than 4% in the above example) may not be worth the attendant

[6] P. 83. The other organization to which Blankenship refers is not named.

increase in costs. In this area, then, there is a possibility of decreasing costs by sacrificing a certain amount of "perfection" in the design and limiting the effort expended to reach each household in the sample.

The remaining two considerations which affect interviewing costs involve a single component of that cost. The first is whether you want bilingual capability.

There are several factors which enter into the decision as to whether or not to conduct interviews in a language other than English. Probably the first one you will want to consider is how many potential respondents you will lose if you do not, and how that loss will affect your results.

To most people's surprise, a partial answer to that question is: not as many as you might think. Strange though it may seem, a sizeable percentage of limited-English-speaking people prefer to attempt an English-language interview rather than to avail themselves of bilingual interviewers. In the statewide survey, for example, only one in every five interviews with persons of Mexican or other Hispanic descent was conducted in Spanish, although a bilingual interviewer was present at all times.[7]

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[7] Certainly, not all of these persons of Mexican or Hispanic descent were limited- or non-English-speaking. The principle remains the same, however: less than 3% of the total interviews statewide could not have been completed in the absence of a Spanish-speaking interviewer.

This same survey was unable to conduct interviews at less than 2% of the useable numbers contacted due to an other-than-Spanish language barrier. Statewide, then, you would lose about 3% of your sample if you interviewed only in English.

The fact of the matter, however, is that no "standard" survey research technique has the capability of reaching limited- or non-English-speaking persons in proportion to their presence in the population. The primary reason for this is that surveys tend to under-represent low-income residents, and those who are limited- and non-English speaking have a greater tendency to be in the lower income categories. Among persons of Mexican and other Hispanic descent, the problem is compounded by a high mobility factor and a greater than average suspicion of interviewers' motives. If yours is a district with a substantial limited- or non-English-speaking constituency, then, you may want to do something non-traditional in order to ensure that this population is adequately represented.

Basically, the non-traditional approaches to reaching populations which tend to be under-represented in surveys involve going directly to the people or going through some type of intermediary. Several of the major colleges and universities in California have tested various techniques for achieving this, and it may be possible for you to obtain advice on the optimal approach for your community by consulting with a researcher

at a nearby institution. Vadi (1977) employed a rather novel technique for identifying and interviewing members of the Chicano community which could be adapted for use with other ethnic groups. Finally, Barrio Planners in Los Angeles has conducted a variety of needs assessments among the limited- and non-English-speaking using various "unique" methods, and you may want to contact them for suggestions.[8]

If you elect to proceed in this direction, there are two cautions which you should bear in mind. The first involves sampling. Many of the non-traditional survey approaches are based on non-traditional and non-statistical samples. Thus although the results may be more representative of the total community, they cannot legitimately be projected to the community as a whole. That is, your findings will be indicative rather than predictive, and it is important that they be treated as such.

The second caution relates to time and money. Even in a traditional survey, having bilingual capability can substantially increase the cost because of the necessity that a bilingual interviewer be constantly on standby. Non-traditional methods, which typically involve some type of field work, can be exceedingly costly and time-consuming. Finally, and regardless of which approach you take, a translation will need to be prepared.

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[8]Conversation with Frank Villa-Lobos of Barrio Planners, Inc.

In order to have a valid survey, you will need to have a word-for-word translation of your instrument - not just someone available who can interpret it in another language. Developing such a translation takes time - and it can be a controversial process. Consider the Spanish language, for example. There are at least ten different types of Spanish spoken in California, each of which is advocated by a different constituency. Frequently, a translation in one will alienate those who speak another. (Parenthetically: it took three weeks and five translators to hammer out the Spanish language version of the state-wide survey. In the end, not one of those involved was particularly pleased with it.)

In sum, the decision as to whether your assessment ought to include bilingual capability - and of what type - will probably involve a careful weighing of two variables: the proporiton of limited- and non-English-speaking residents in your district; and the resources (time and money) you have available to interview them. The least cost will be incurred by interviewing only in English, but this may yield a less than representative sample in heavily non-English-speaking districts. Somewhat more cost will be incurred and a somewhat more representative sample generated by adding bilingual capability to a "standard" survey research technique. Finally, by far the most costly - and unquestionably the most representative in areas in which a limited- or non-English-speaking constituency represents a sizeable percentage of the population - will be the addition of a non-traditional strategy to your "standard" survey.

The final factor which will affect the interviewing costs for your assessment is your distance from the firm conducting it. For the most part, this is one variable over which you have very little control. You might select a firm on the basis of its location and the long distance rates to your area, but this criterion is so much less important to the success of your assessment than other criteria (e.g., the reputation and professionalism of the firm) that you would probably not be very wise to do so. The best approach to this factor is simply to accept the effect of distance on toll charges unless there are two equally qualified firms at different distances, one more advantageous than the other. In that case, you could make your final selection on the basis of geography.

To summarize: you can minimize the interviewing costs for your assessment by:

- Limiting the number and length of the questions you include
- Considering whether fewer calls might suffice for your purposes
- Considering whether the response rate with fewer call-backs would be acceptable
- Having all of the interviews conducted in English (assuming local circumstances permit)
- In some cases, selecting a firm in a geographically advantageous location with respect to telephone toll charges

DATA PROCESSING

Most professional research firms routinely edit, code and keypunch any survey they conduct, develop a clean computer tape or deck of computer cards and prepare a set of statistical tabulations for the customer. Experience suggests that the fee for these services is well worth the price.

In all but the most extreme financial straits, attempting to edit, code and keypunch survey instruments completed by another organization is not recommended. The process is both frustrating and subject to an almost infinite variety of errors. Running one's own tabulations from a clean tape or deck of cards is less prone to error, but it is at least equally and perhaps more frustrating. The Project ran data for five participating districts, and in doing so found that an enormous amount of time was in effect wasted in discussing and checking out various details by mail or telephone. If you can afford to pay for these services, then, by all means do so. The time and headaches you save will almost surely pay for this assistance.

One note of caution: If you do decide to be brave and run your own tabulations, be sure the card format the organization proposes is compatible with the machine you have. If it isn't, you'll wind up with a tape or deck of cards that won't run at all.

ANALYSIS AND REPORT WRITING

One of the rather delightful luxuries of contracting for a needs assessment is having someone else do all the calculations, worry about what the numbers mean and write up the final report. It is, however, a luxury rather than a necessity unless your brain refuses to function at the sight of a number. Moreover, it may be a luxury which you would prefer not to indulge in.

There is no question that professional research firms have a better grasp of numbers, their meanings and the ways in which they can be manipulated than the average community college administrator (research directors excluded). If you want a professional and sophisticated analysis of your data, then, you are probably best off including this service in your contract unless you have ready access to a researcher or statistician. What research firms typically do not have, on the other hand, is an in-depth understanding of community colleges. It is therefore probable that your report will lack a certain "flavor" because it was compiled by a dispassionate outsider rather than an impassioned insider. (This also has its advantages; passion and research don't mix, and if you write your own report, you will probably find yourself having to fight certain biases.)

Secondly: In the final analysis, only you will be able to determine what your findings really mean. Only you (and your staff) know the local situation, the parameters of various issues and the limitations

you face in implementing your results. If you can bring yourself to face the analysis and reporting task, you may well find that the true significance of your findings is clarified by the process itself. A figure which you labored over and wrote up yourself will be much more meaningful than one which was presented to you as a fait accompli.

Therefore: if you can find the time and if your mathematical mind is willing, the author's recommendation is that you write your own report. Let the professional organization tabulate the results for you - and then take the time to figure out for yourself what the numbers mean.

SUMMARY

The preceding sections have outlined the various factors which contribute to the cost of a needs assessment contracted to an outside organization and discussed the pros and cons of eliminating or curtailing various items.

In general, it was recommended that costs be limited if necessary or desired by:

- Either borrowing or developing all but the final design
- Severely limiting the number and length of the questions included

- Obtaining the information necessary for representative sampling
- Considering a decrease in the number of interviews and/or call-backs desired
- Carefully weighing the necessity of bilingual capability
- Writing your own report

In general, it was suggested that the following efforts to limit the cost of an outside contract are not cost-effective:

- Selecting a firm on the basis of location, all other things being equal
- Undertaking the data processing phase of the assessment

SELECTING A FIRM

There are well over 1,000 firms in the United States which conduct public opinion polls of one sort or another. Some of these are "name" firms - e.g., Field, Gallup, Harris - while others are small organizations most people never heard of. Before you select one, it pays to do your homework. Good survey research is an extremely intricate art; if you don't select a reputable and reliable firm, you are likely to have not only innumerable headaches, but also an utterly worthless assessment.

Two of the "name" firms - Field and Gallup - have conducted telephone needs assessments for California community college districts, as has a smaller firm called ADF Research in San Rafael. Presumably, they know the subject matter. But before you leap to any conclusions: check with their customers! Were they satisfied with the working relationship? The results? How do outsiders view the studies? Do they appear valid and responsibly interpreted? Even a professional organization can do a slipshod job upon occasion. If you're not a researcher, ask someone who is. Many flaws in research design and reporting are difficult for the untrained eye to detect.

You may also want to investigate some firms which have the potential to conduct such a study but simply haven't had the opportunity. This is particularly important because *A GOOD JOB OF RESEARCH IS NO GUARANTEE OF A GOOD WORKING RELATIONSHIP.* For various reasons, personalities may clash, priorities may vary and communication styles may differ. Unless you have an unqualified recommendation from someone you trust who is experienced in this area, it will be advantageous to consider several possibilities before you make a final selection.

A fairly complete listing of research firms is provided by the International Directory of Research Houses, an annual publication of the American Marketing Association. Although this directory lists the organizations' areas of specilization, however, it gives no information which will help you in evaluating a firm's reliability or competence.

Before you request a proposal or bid from any firm you are not directly familiar with, you will want to consider the following:

- How much experience does the firm have in this area? Has it conducted other surveys for public agencies? For educational institutions? Ask for a recent client list and the names of references, and then follow up on those references which are in related fields.
- How well does the firm construct survey instruments? Ask for some samples, review them yourself and then get someone else to review them who has a research background. (If the firm indicates that they are all proprietary, find out from whom you might get permission to see them. For those that are in the public domain, this should ultimately be possible.)
- What type of sampling does the firm employ? (According to Blankenship, a firm which uses random digit dialing "should be scored some extra points."[9])
- How are interviewers selected and trained? Is there a formal training program? How thoroughly are interviewers briefed for a particular survey, and by whom is this done?

[9] P. 223.

- How are interviewers supervised and monitored? Is the work of interviewers verified? Are records of interviewer performance maintained and regularly reviewed?
- How rigorous are the firm's data processing procedures? What methods are employed to verify the accuracy of the data entry? Are response punches checked for logical consistency within instruments?[10]
- What are the qualifications of the person who will be supervising your assessment and writing up any report on the results?

The best way to obtain the answers to these questions is to ask them directly - and preferrably at the organization's office. Any truly professional firm will answer them forthrightly and courteously, probably showing you exactly what they do on-site. If they hedge, appear unwilling to show you around or try to convince you that their way is more than adequate (and by now you should know better), beware.

Once you have identified an organization or organizations which are reputable, professional and employ procedures which meet your needs, it

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[10] In its simplest form, the verification of key data entry involves entering each instrument twice and comparing the results. This may be a waste of resources with highly accurate operators, however, and it runs the (admittedly slight) risk of the same error being made both times. More sophisticated approaches, which may be individually programmed, check responses for internal consistency. For example: if Respondent A indicated that he or she had never attended XYZ College, that person should not have answered Yes (Code 1) or No (Code 2) to a follow-on question about the receipt of counseling while in attendance. A program checking for internal consistency would automatically reject a 1 or 2 entry for the counseling query.

is time to solicit actual bids or proposals. To do this, you will need to develop *SPECIFICATIONS* for your assessment.

Specifications should encompass the following topics:

- The level of effort you expect from the firm with respect to design
- The anticipated length of the instrument [11]
- The probable number of open-ended questions (which require coding time)
- The size sample you desire
- How the sample is to be drawn
- Respondent selection procedures within households
- Interviewing procedures, particularly the timing of calls and the number of call-backs desired
- Any provisions for bilingual capability
- The data processing services you desire, including verification procedures
- The level of effort you expect from the firm with respect to preparation of the final report

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[11] If you are not certain how long the instrument will be, ask for bids on a range of possible lengths - e.g., 8, 10 and 12 minutes.

These specifications should be forwarded to the organization(s) you have identified along with your request that they submit a bid to conduct your assessment. In all probability, most of the firms you contact will respond with formal bids. These bids should recapitulate their understanding of your specificatons and put a price tag on the assessment. (It is frequently helpful if this price is broken out by phase; you may wish to request this in your solicitation.) Their responses may also include suggestions as to how you might improve the design or specifications for your assessment.

Having read this far, you are undoubtedly aware not only that there are various levels of sophistication in the conduct of a needs assessment, but also that professional survey research firms have a variety of ways of approaching them. If it appears to you that the firm is trying to short-cut the "technical perfection" you are seeking - *PROCEED WITH CAUTION*. If, on the other hand, their suggestions appear logical and well-intentioned, then it will probably pay off if you at least give them serious consideration. This Handbook cannot possibly cover all of the details and options involved in needs assessment surveys, nor is it possible to describe the myriad variations in what professional organizations can do for you. Accordingly, suggested changes in what you propose to do may improve your survey in terms of what a particular firm is comfortable with and most capable of accomplishing.

Clearly, one of your primary considerations in evaluating the bids you receive will be cost. You will probably find, however, that bids from established firms will be fairly close together in terms of actual dollar amounts. (If they aren't, it is possible that someone misunderstood your specifications.) Under these circumstances, recall the comments about communication styles and *TRY TO AVOID THE TEMPTATION AUTOMATICALLY TO SELECT THE LOWEST BIDDER.* In the long run, your assessment will probably be a better piece of work and you will undoubtedly enjoy the entire process considerably more if you select a contractor with whom you feel comfortable working - even at the cost of an additional few hundred dollars.

WORKING WITH AN OUTSIDE CONTRACTOR

Continuing with the subject of communication: after the contract has been signed, the most important aspect of working with an external needs assessment contractor is ongoing dialogue. None of us are perfect, and it stands to reason that even the most thoroughly planned and supervised needs assessment will encounter problems, be they delays, snags or outright errors. This applies both to things which occur on your end (e.g., a belated delivery of the final instrument or the contract) and to things which arise on theirs (e.g., an unforeseen delay in getting the results to you). ("You mean you won't have the final report ready for the last Board meeting of the year?? But we *promised* it to them ...!") It is essential that you and the contractor inform

each other promptly when such contingencies arise. If you don't, your assessment may wind up ranking as one of the most unpleasantly surprising experiences of your career.

One final note, returning to the theme with which this chapter began: there will be a certain amount of work you will need to do throughout your assessment, regardless of the percentage of it you contract out. For instance: designing or consulting on the content of questions; determining the telephone exchanges to be included; deciding which respondent characteristics you want to examine in the statistical tabulations; reviewing and approving the final report. You will therefore need some structure (and time) for the pursuit of these various activities. Accordingly, you will probably find it worth your while to read Chapter II - even if you are planning to have an outside organization conduct the entire assessment from start to finish. In particular, Steps 1 and 2 will give you some ideas regarding the organizational structure of a needs assessment effort and the kind of in-house planning which needs to take place before the first question is designed. The remaining steps will provide you with insights into the "mechanics" of a needs assessment which will enable you to converse knowledgeably with whatever contractor you select.

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APPENDIX

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